God
and the
World of Signs

*Trinity, Evolution,
and the
Metaphysical Semiotics
of C.S. Peirce*

ANDREW ROBINSON

BRILL

God and the World of Signs

Philosophical Studies in Science and Religion

VOLUME 2

God and the World of Signs

Trinity, Evolution, and the Metaphysical Semiotics of C.S. Peirce

By

Andrew Robinson

BRILL

For my mother, Jane, and in memory of my father, Roger,
from whom I learned to signify with words,
and to walk without blocking the way of inquiry.

CONTENTS

ACKNOWLEDGEMENTS

Hugenholtz, Suzanne Mekking, and Birgitta Poelmans. Its remaining imperfections are, of course, my own responsibility.

Finally, my wife, Jo, and children Helen and Charlie, have tolerated more than ought to have been asked of them in the dozen or so years of inquiry reflected in these pages. I recently added Jo's maiden name to my own as an additional middle-name. I apologize for any bibliographical inconvenience caused, but I wished thereby to mark the importance to me of being a part of her family.

The book is dedicated, with love and gratitude, to my own parents.

<div style="text-align: right">

Andrew John Nottage Robinson
August 2010

</div>

ABBREVIATIONS

EP 1 *The Essential Peirce: Selected Philosophical Writings, Volume 1 (1867–1893)*. Edited by Nathan Houser and Christian Kloesel. Bloomington: Indiana University Press, 1992.

EP 2 *The Essential Peirce: Selected Philosophical Writings, Volume 2 (1893–1913)*. Edited by the Peirce Edition Project. Bloomington: Indiana University Press, 1998.

References to *The Essential Peirce* are given by volume followed by page number.

CP *The Collected Papers of Charles Sanders Peirce*, Volumes I–VI, edited by Charles Hartshorne and Paul Weiss. Cambridge, Massachusetts: Harvard University Press, 1931–1935; Volumes VII–VIII, edited by Arthur W. Burks. Cambridge, Massachusetts: Harvard University Press, 1958.

References to *The Collected Papers* are given by volume followed by paragraph number.

NRSV New Revised Standard Version. All biblical references are to this version unless otherwise indicated.

INTRODUCTION

This book could be described in various ways:

It is a philosophical study in the field of science-and-religion. Specifically, it uses the philosophy of Charles S. Peirce (1839–1914) to mediate between Darwinian evolutionary biology and Christian theology.

It is a contribution to Christian systematic theology. Specifically, it is a proposal for a new way of approaching Trinitarian theology; a 'semiotic model of the Trinity'.

It is a proposal for a new metaphysical framework – an alternative, say, to Whitehead's process philosophy – within which science and theology may each find it possible to make a home.

The core ideas of the framework can be easily summarized: 1) The ontological structure of the world has a three-fold pattern, picked out by Peirce's phenomenological analysis of the 'categories' of Firstness, Secondness and Thirdness, and reflected in the triadic structures of signs and sign-processes (the subject matter of semiotics). 2) The triadic patterns thus identified in the structure of the created order have non-trivial parallels with Christian thinking about God as Trinity, Father, Son and Holy Spirit. These parallels are such that the three-fold patterns of the world, including the triadic dynamic of sign-processes (semiosis), may be understood to model – in a sense to be carefully unpacked – the mutual dynamic interplay of the Trinitarian persons. In short, semiosis models perichoresis. 3) The triadic structure of the world reflects the triune pattern of God's continuous creative work, mediated by the Word and Spirit. In other words, the 'categories' – as manifested and experienced within the created order – and the three-fold patterns of creaturely semiosis, are 'vestiges of the Trinity in creation'.

As a proposal for an overarching metaphysical-theological scheme the project is, of course, very ambitious – perhaps absurdly so. However, the scheme is not the product of mere *a priori* speculation. Rather, it stems from of a sustained inquiry undertaken at the interfaces of science, philosophy, and theology. Peirce held that all inquiry begins from the 'irritation of doubt'. The irritations that originally drew me into this particular inquiry were doubts about the coherence of Christian theology in the light of evolutionary biology. Suppose that

the story of the Earth is told in terms of an analogy with a book.[1] The Earth is about 4500 million years old. If each page of the book represents 10 million years the story of the Earth from its formation to the present will be told in 450 pages. Life on Earth emerged relatively early in the story, perhaps on page 70. For more than half the book life consisted of nothing more complex than single-celled organisms. Multi-cellular organisms do not appear until page 390. Just six and a half pages from the end, on page 443, the dinosaurs are sent extinct, probably largely as a result of a meteorite impact, leaving the way open for an adaptive radiation of mammals into the vacated ecological niches. If that chance event had not occurred the dinosaurs might still dominate the Earth; mammals would still be small and nocturnal, and humans would not have evolved. Half a page from the end of the book the hominid lineage splits from the line from which chimpanzees are descended. Anatomically modern humans appear only in the very last line. And the whole narrative of biblical history from Abraham to the present – something over 3000 years – would be compressed into the very last letter of the last page of the volume. Christianity, at least as I understood it, entailed belief in a God who created the world, who acts providentially within that world, and who has given human beings a special role in bringing the purposes of the creation of that world to fulfilment. But if science is able to give, or at least seems to be moving towards, a satisfying explanatory account of the mechanisms and processes behind the unfolding of the history of life, what place can there be for the theological notion of God's providential action in the world? And what are we to make of the fact that the whole sweep of the biblical narrative, the Judaeo-Christian story of God's providential work on behalf of humanity, represents a single letter's worth of history in a tome otherwise filled with pre-biblical events. What was God 'doing' in the rest of the volume, not to mention the two equivalent sized volumes of the history of the universe before the formation of the Earth?

In short, Christianity and Darwinism, it seemed to me, were like two pieces of a jigsaw puzzle that would not fit comfortably together. By applying a fair amount of force, distorting the shape of one or the other, they might just about be made to sit alongside each other.

---

[1] This analogy was first suggested in Christopher Southgate, Michael Robert Negus, and Andrew Robinson, "Theology and Evolutionary Biology," in *God, Humanity and the Cosmos: Second Edition Revised and Expanded*, ed. Christopher Southgate (London / New York: T&T Clark, 2005), 160.

From certain angles it might be possible to convince oneself that the match was satisfactory. But then some inconsistency or conflict would become apparent and the doubts would return.

If two jigsaw pieces cannot be made to fit the usual reason is that they are not meant to fit. Sooner or later one starts to look for a third piece that will join to each of the others, connecting them by mediating between the two. The obvious candidate as a mediator between science and religion is philosophy. The question is then, what sort of shape would the philosophical mediating piece need to have if it is to serve the purpose of joining things up coherently? Many in the science-and-religion field have found the shape of Whitehead's process philosophy attractive, and I spent some time myself trying out ways of using it to alleviate the irritation of doubt. Process thought certainly seems to fit comfortably with the scientific evolutionary perspective. I became persuaded, however, that Christian theology has to give up too much to enable it to mesh with Whitehead's scheme.

If a suitable mediator between recalcitrant pieces of a jigsaw cannot be found, another possible conclusion is that the pieces are not supposed to fit together at all; even that they are pieces belonging to different jigsaws. In the science-and-religion debate, this conclusion may take the form of a denial of the coherence of attempts to locate scientific and theological insights within a single metaphysical scheme. According to this 'anti-metaphysical' move, science and theology belong to different 'language games': it is a category mistake to think that they can be joined to form a coherent picture. On the rebound from process thought I was, in turn, tempted for some time by this approach. However, in the course of thinking about how language games might have evolved I happened upon the field of biosemiotics, the application of the theory of signs (particularly Peircean semiotics) to biology. In Peirce's philosophy I began to suspect that I had picked up a piece of the jigsaw that potentially had the shape required for a satisfactory mediation between science and religion, between Christian theology and evolutionary biology. This book is the result of a dozen or so years working on that idea.

Darwin famously described the *Origin of Species* as 'one long argument'.[2] The equivalent description of this book, without wishing

---

[2] Charles Darwin, *The Origin of Species by Means of Natural Selection or the Preservation of Favored Races in the Struggle for Life* (1859, reprinted New York: The Modern Library, 1993), 612.

to suggest any commensurability of merit, is that it is 'one big guess'. More precisely, it is one big network of guesses; more technically, it is a set of related hypotheses. In other words, the epistemological structure of the book is non-foundationalist or, as Peirce would have put it, 'fallibilist'. This is important given that, as I have already acknowledged, the project is arguably absurdly ambitious. The elements of the structure of my big guess include engagements with, and attempts to contribute to, Peirce's philosophy, Trinitarian theology, Christology, theological anthropology, the explanation of human evolution, the Christian doctrine of creation, the ontological basis of God's gracious revelation to creatures and of creaturely epistemological access to God, and even the problem of the origin of life. Any one of these areas deserves a lifetime's work; there is no hope of a single individual achieving an adequate grasp of them all. Nevertheless, the nature of my proposal is such that its evaluation must take the form of testing its potential for generative interactions between these areas. Anyone who is expert in any of the individual elements of the proposal will no doubt find omissions and inadequacies. I ask such experts, first, to alert me to such deficiencies but, second, to be prepared to judge the proposal as a whole. The proposal is not one long deductive argument, only as strong as its weakest link, but a network of modifiable hypotheses. For those who find deficiencies in any of the individual strands of the network, I invite you to ask, do such deficiencies threaten to cause the whole structure of the project to unravel?

I have been blessed in the last few years with opportunities to begin to test elements of the proposal in dialogue with experts in the various fields into which I have trespassed and I am encouraged by the degree of interest the proposal has generated. Furthermore, where objections have been raised I have generally found that the resulting developments of the network of hypotheses that constitute the proposal have turned out to seem fruitful (generative of further constructive work) rather than arbitrary and defensive. In other words, I venture to suggest that the project has shown some evidence of the characteristics of a 'progressive research programme' in philosophy, theology and science.[3] Testing whether the programme will continue to prove fruit-

---

[3] Imre Lakatos, "Falsification and the Methodology of Scientific Research Programmes," in *Criticism and the Growth of Knowledge: Proceedings of the International Colloquium in the Philosophy of Science, London, 1965, Volume 4*, ed. I. Lakatos and

ful under further scrutiny is, of course, the purpose of submitting this big guess ('abduction', as Peirce would have called it) to the community of inquirers. I would have preferred to have been able to spend yet more time seeking to improve each individual element of the project, but creaturely existence is finite. I ask the reader, then, critically to consider each element of the proposal on its merits, but also to have in mind the question of whether the structure of the proposal as a whole (allowing for any necessary modification of the individual elements) offers sufficient coherence, comprehensiveness, fruitfulness and elegance to justify its audacity.

My proposal, then, is epistemologically non-foundationalist; a network of hypotheses rather than a chain of deductive arguments. It follows that the order of the chapters could have taken any of a number of different possible routes through this network. For reasons of explanatory clarity, the order I have chosen leads from philosophy (Peircean metaphysics and semiotics) to theology (the doctrines of the Trinity and Incarnation) to anthropology (scientific and theological) to evolutionary biology (and a philosophical reading thereof) and back to theology (the doctrine of creation). This emphatically does not imply, say, that I take philosophy to have any epistemological priority over theology, or that the doctrine of creation should be subservient to science. From an ontological point of view my conviction is that the world is utterly and absolutely dependent on God as creator. That the created order is structured in such a way that speaking about God is possible must be regarded, if true, as reflecting the gracious gift of God to creation. There is a sense in which this whole book is an attempt to explore whether and how such an extraordinary claim may be coherent in the light of philosophy, science and theology. But if such coherence may be found, it cannot be because philosophy, science or theology can operate independently of God, claiming some neutral vantage point outside of God's grace. Rather, it would be because the God-given structures of the world are such that creaturely inquiry can be fruitful, even inquiry into our relation to the creator. A book about signs might be expected to have some signs embedded in its own structure. One such sign is in the structure of the title and subtitle, both of which start with God (the Trinity), move to the world

---

A. Musgrave (Cambridge: Cambridge University Press, 1970); Nancey Murphy, *Theology in an Age of Scientific Reasoning* (New York: Cornell University Press, 1990).

(particularly the evolution of the world), and end with the signs (more generally, the philosophical framework) by means of which creatures are enabled to reflect on the world and its creator.

Some further methodological remarks are in order concerning my appropriation of Peirce. Peirce was a flawed genius. His tragedy was that his ideas were about a century ahead of his time.[4] As a result, few of his contemporaries were able to appreciate the originality and importance of his philosophy, and his personal failings and inability to manage simple practical affairs left him vulnerable at the hands of the many influential people whom he antagonised. Because he never held a permanent academic position he left no monographs and no body of students to continue his work. The development of his thought can now only be traced through his various series of lectures and papers, miscellaneous book reviews and articles, amounting to about 12 000 pages, and his voluminous unpublished manuscripts consisting of a further 80 000 or so hand-written pages. Six volumes of the *Collected Papers of Charles Sanders Peirce* were published between 1931 and 1935,[5] and a further two volumes in 1958.[6] In 1982 work began on a more comprehensive and better organized selection under the auspices of the Peirce Edition Project at Indiana University, of which six volumes out of a projected 30 have so far appeared. In addition, the Peirce Edition Project has produced two volumes of *The Essential Peirce*, covering the years 1867–1893 and 1893–1913.[7]

Reconstructing the development of Peirce's philosophy from these fragments is necessarily a matter for specialists. Engaging in that kind of work is, as mentioned above, the labour of a lifetime. In order to appropriate Peirce's work for contemporary applications, as scholars

---

[4] Joseph Brent, *Charles Sanders Peirce: A Life*, Revised and Enlarged Edition (Bloomington: Indiana University Press, 1998), 136–137.

[5] *The Collected Papers of Charles Sanders Peirce*, Volumes I–VI, ed. Charles Hartshorne and Paul Weiss (Cambridge, Massachusetts: Harvard University Press, 1931–1935).

[6] *The Collected Papers of Charles Sanders Peirce*, Volumes VII–VIII, ed. Arthur W. Burks (Cambridge, Massachusetts: Harvard University Press, 1958).

[7] *The Essential Peirce: Selected Philosophical Writings, Volume 1 (1867–1893)*, eds. Nathan Houser and Christian Kloesel (Bloomington: Indiana University Press, 1992); *The Essential Peirce: Selected Philosophical Writings, Volume 2 (1893–1913)*, edited by the Peirce Edition Project (Bloomington: Indiana University Press, 1998). Hereafter, where possible, when citing Peirce's writings I shall give page references to *The Essential Peirce*, referring to the first volume as EP 1, and the second volume as EP 2. References to the *Collected Papers* will be given as CP followed by the volume and paragraph number.

in various disciplines have begun to do, the only practical way forward, it seems to me, is to read Peirce through the lens of the secondary sources. That, presumably, is as Peirce scholars would wish it. Peirce would have been appalled if it turned out that Peirce scholarship generated nothing other than more Peirce scholarship! Neither is it to say that I do not enjoy reading Peirce first hand – he is a wonderfully entertaining writer. But I would not have been able to appropriate Peirce for the present inquiry without the help of the secondary sources. Moreover, it seems to me that Peirce scholars have reached a point, perhaps only quite recently, at which they are able to offer a compelling overview of the coherence and potential fruitfulness of Peirce's philosophical scheme. I am therefore indebted to the work of Peirce scholars but I do not count myself among them.

I regard myself, then, as a disciple of Peirce, not a Peirce scholar. This is perhaps not the usual way round: there are many scholars who find Peirce interesting who would not call themselves followers. I call myself a disciple of Peirce in the sense that I find his total philosophical vision sufficiently coherent and compelling to be worth pursuing as far as it can be taken. How far that is remains to be seen, but I suspect the extent of his genius was such that the answer may be 'a very long way'. As a methodological principle, then, I have chosen to allow my whole framework to be informed and shaped by Peirce's philosophy. This should not be taken to imply, however, that I regard Peirce as an infallible authority. Again, Peirce would have disowned such a view. As he put it, one rule "deserves to be inscribed upon every wall in the city of philosophy: Do not block the way of inquiry" (EP 2.48). Accepting any individual's view as beyond criticism would constitute a potential block to the way of inquiry. Nevertheless, pursuing the paths opened up by Peirce's philosophy is a legitimate starting point for a journey, and following Peircean paths has been enough to keep me occupied. Others, I hope, will join me for a while along these paths and will bring in new dialogue partners of their own to help map the territory, going, if necessary, beyond Peirce's cartography. By the same token, the thought that Peirce might well have disapproved of some of the uses to which I have put his philosophy does not overly worry me.

Finally, while on these methodological observations, I wish to acknowledge that my appropriation of Peirce's philosophy is, in a sense, 'naïve'. To some people that will seem a strange thing to say about a book of this sort: to them it will look as if I am making simple things too complex. In response, returning to the metaphor of the

jigsaw puzzle, I would say that, when the puzzle pieces finally fit, the result can indeed be satisfying, simple, and beautiful. But finding the right pieces and working out how they fit together can be complex. This book, being a work of academic philosophical theology, is concerned with the process of picking up and evaluating the pieces and, as such, is necessarily complex. However, I hope that what may begin to become visible as the book progresses is an assembly of pieces that has a kind of elegant simplicity. Others will look at the various elements of my proposal and say that I have made complex things too simple. I have, they may say, simplified Peirce, over-schematised the history of Trinitarian thought, neglected important areas of Christology, been highly selective in my analysis of the field of palaeo-anthropology, overlooked important contributions to the science-religion debate, gate-crashed the field of origin of life research, and played fast and loose with the Christian doctrine of creation. All of this is true. The question, though, is whether this strategy of naivety, which is enforced on me by the kinds of constraint mentioned above, is an entirely negative thing.

I am inclined to think that coming to these various fields as something of an outsider, naively, as it were, may have enabled me to see connections between the pieces that are perhaps less apparent to those who know much more than me about the details of the pieces themselves. Perhaps that is true of inter-disciplinary work in general. In any case, whether naivety is a good thing in this context will have to be judged, as indicated above, by the coherence, comprehensiveness, fruitfulness and elegance, or otherwise, of the result. Incidentally, acknowledgment of my position as something of an outsider to the fields into which I have strayed raises the question of whether the discipline in which I was originally more professionally at home – the practice of medicine – has contributed anything to my thinking. I would wish simply to remark that, for reasons that I think are not entirely coincidental, physicians have at times played significant roles in the history of semiotic thought. And I would add that I offer my prescription for the treatment of a certain chronic metaphysical deficiency in the hope that it may effect a healing, of a kind.

The structure of the book is as follows. In Chapter 1 I set out three of the elements of Peirce's philosophy that will be central to my proposal. After a brief introduction to Peirce's idea that 'the world is perfused with signs' (§1.1), I introduce his three-fold scheme of metaphysical categories, Firstness, Secondness and Thirdness (§1.2). I then

explore his semiotics in more detail, from the perspective of the historical development of his theory; with regard to its relation to the categories; and in terms of the way in which the categories ramify through his extraordinary taxonomy of signs (§1.3). Finally, I outline the contours of his theory of inquiry: his fallibilism, his pragmatism, his robust defence of epistemological realism, and his emphasis on the communal nature of inquiry (§1.4).

In Chapter 2 I propose a 'semiotic model of the Trinity'. That is, I suggest a way of approaching, clarifying and developing Trinitarian thought in the light of Peirce's metaphysics and semiotics. I investigate the parallels between Peircean Secondness and Christian thinking about the Logos / Son (§2.1); between Peircean Firstness and the Christian idea of the unbegottenness of the Father (§2.2); and between Peircean Thirdness and the Third Person of the Trinity, the Holy Spirit (§2.3). I suggest that the mutual dependence and dynamic interplay of Peirce's categories, manifest in structures of creaturely semiosis, models the 'perichoresis' of the Trinitarian persons (§2.4). I end with some observations about Peirce's own remarks about the Trinity, and note that, although Peirce scholars often allude to the apparent parallels, a fully worked out Peircean model of the Trinity has not thus far emerged (§2.5).

In Chapter 3 I extend and test the 'semiotic model' by applying it to Christian thinking about the Incarnation, by developing a semiotic approach to theological anthropology, and by exploring how this theological anthropology gives rise to some questions about palaeoanthropology. I approach the concept of Incarnation via some recent New Testament scholarship, in the light of which I suggest that, in terms of Peirce's taxonomy of signs, Christian theology wishes to say that the human person Jesus of Nazareth was a 'qualisign' of the very quality of God's being (§3.1). I explore how this idea fits with, and may contribute to, traditional and contemporary approaches to Christology, including a comparison of the idea of the Incarnation as qualisign with Karl Rahner's notion of Christ as the 'real-symbol' of the Father (§3.2). This semiotic approach to the Incarnation suggests a new way of thinking about what makes humans distinctive, and hence gives rise to the possibility that Peircean semiotics may contribute to understanding how humans evolved. I set out this hypothesis in terms of the idea that advances in semiotic capability are not constituted by ascending a hierarchy of semiotic capacities but by exploring new spaces within a 'semiotic matrix' (§3.3). This gives rise to a specific,

scientifically testable, proposal about what triggered the emergence of behaviourally and cognitively modern humans. Unusually in the field of science-and-religion (at least in the way the field is usually understood), this is an example of theological work potentially giving rise to new scientific understanding. In the final section of the chapter (§3.4) I develop the preceding Christological and anthropological reflections into a theological anthropology in which the human capacity for self-transcendence is understood in terms of the gift of the capacity for 'abduction', and discipleship is understood in terms of Peirce's taxonomy of interpretative responses to signs.

Chapter 4 extends the scope of the evolutionary perspective, beginning with an examination of the main themes and phases of Darwinism. I suggest that the three key themes raised by Darwinian evolutionary biology are those of evolutionary continuity, ontological naturalism, and historical contingency, and that these correspond broadly to three phases in the development of Darwinian evolutionary biology (§4.1.1). These challenges were, as I have already mentioned, the basis of the 'irritation of doubt' which originally provoked these inquiries. (The non-foundationalist epistemological structure of my proposal, noted above, explains why it is not necessary for these challenges, and indeed this chapter, to appear at the beginning of the book.) In response to these challenges I introduce the field of biosemiotics as a possible philosophical resource for the development of a scientifically-informed theology of nature (§4.1.2). An obstacle to the employment of biosemiotics in this way is that mainstream philosophy of biology has often been sceptical about the use of semiotic concepts. In response to this objection I report work undertaken in collaboration with my colleague Christopher Southgate (§4.2). I explain our proposal, drawing on T. L. Short's account of Peirce's theory of signs, for a new general definition of interpretation based on a naturalized teleology, and I outline how the definition may open up a new approach to work on the origin of life. Finally, I compare our biosemiotic approach with the 'teleosemantic' school of the philosophy of biology. Significantly, it seems that, once again, the philosophical core of the project appears to give rise to potentially generative scientific spin-offs.

In Chapter 5 I draw together the strands that have been laid out in the preceding chapters. I propose a new theology of nature, according to which the triadic patterns of the categories and the three-fold structures of creaturely semiosis may be understood as 'vestiges of the Trinity in creation'. I begin by outlining Peirce's own evolutionary

cosmology, which is informed by his conviction that Firstness, Secondness and Thirdness each have a distinctive and enduring role in the evolution of the cosmos (§5.1). I go on, in §5.2, to correlate these distinctive roles with the three main themes presented by Darwinism to Christian theology as identified in Chapter 4; namely continuity (correlated with evolutionary Thirdness), contingency (correlated with evolutionary Firstness) and naturalism (correlated with evolutionary Secondness). In the process, I also draw in the strand provided by my semiotic model of the Trinity, to which I add the traditional and scriptural notion that creation is not only the work of the Father, but is 'mediated' by the Son and the Spirit. The idea that emerges is that Peirce's three modes of evolution, and the three key themes arising from reflection on Darwinian evolutionary biology, may be understood to reflect the patterning of creation by the distinct yet inseparable creative activity of the Father, Son, and Spirit respectively. In §5.3.1 I clarify what I mean by this by examining the ways in which the relation between the apparent 'threeness' of the created order and the theological attribution of 'threeness' to God might be understood in terms of these similarities reflecting 'analogies', 'likenesses', or 'vestiges' of the Trinity, each of these terms being given a precise definition. In §5.3.2 I suggest that the semiotic model points to a way of articulating how the Word and Spirit may each have distinctive roles in creation, something that traditional formulations of the idea of the Trinitarian mediation of creation have struggled to do. Finally, in §5.3.3, I give some reasons, formulated in terms of the relation between the 'immanent' and 'economic' Trinity, for supposing that the idea of 'vestiges of the Trinity in creation', as specifically construed in the light of my semiotic model of the Trinity, may be theologically coherent and fruitful.

In Chapter 6 I turn to the important task of considering how my proposal as a whole sits with questions of philosophical and theological methodology. I begin by examining the status of metaphysical thought and metaphysical schemes (§6.1). I acknowledge that metaphysics has been somewhat out of fashion recently, largely because of suspicions that it is guilty of damaging forms of *a priori*-ism and authoritarianism. I argue that Peirce's approach to metaphysics, which is hypothetical and non-foundationalist through-and-through, is able to avoid such criticisms and to offer a coherent account of the 'architecture' of knowledge. I go on to ask whether anything in my proposal would amount to the kind of 'natural theology' that attempts to

claim knowledge of God independent of God's gracious self-revelation (§6.2). I argue that my approach is fully consistent with the theological conviction that no knowledge of God is possible outside God's grace. I seek to show, however, that the ontological aspect of this conviction (an affirmation of the absolute ontological dependence of the world on God) is compatible with the idea that the world is structured in such a way as to allow God to reveal God's-self to the world. That being the case, it is possible to generate 'second-order' hypotheses about the being of God (including the 'hypothesis' of God as Trinity), which must be true of God as the 'transcendental conditions' of God's gracious self-revelation, yet which do not constitute a rejection of the conviction that God is the ontological ground of such epistemological conditions. For that reason, paradoxically, I suggest that the idea that the three-ness of the categories and the triadic structures of semiosis are vestiges of the Trinity in creation is more theologically coherent than 'weaker' construals of the nature of these apparent parallels. If the triadic structures of semiosis that make revelation possible – and which can be discerned in the world by philosophical and scientific inquiry – are not grounded in the being of God, then revelation would, indeed, depend on something originating outside God's own gracious gift to creatures. Only after thus clarifying my commitment to the priority of God's grace in revelation do I dare to suggest, in the context of Peirce's 1908 paper *A Neglected Argument for the Reality of God*, how an interpretation of the experiential encounter with the three 'universes of experience' may offer the basis of a form of 'cosmological argument' for the reality of the Triune creator (§6.3).

Chapter 7 is called 'Guesses at some Riddles', an allusion to the sketch that Peirce made in 1887–1888 for a book that was never published.[8] My choice of title is intended as a gesture to the fact that, as already noted, the whole book amounts to one big guess. It is also intended as a sign of my acknowledgement that, ambitious as this guess is, loose ends remain.[9] As a representative example of such loose

---

[8] *A Guess at the Riddle*, EP 1.245–279.
[9] I should also mention that a personal reason for choosing to allude here to Peirce's *A Guess at the Riddle* is that it recalls me to something that perhaps lies behind, or prior to, the particular intellectual irritation that prompted this inquiry. This is that, for as long as I can remember, I have lived with a sense of puzzlement about the world: why is there anything? Why am I here experiencing it? What is it to be an experiencing 'thing' in the world? But even articulating this puzzlement may give an excessively intellectual impression of the felt presence of the riddle.

ends, I begin by discussing the nature of Trinitarian 'personhood' in the context of the traditional psychological and social analogies for the Trinity (§7.1). I suggest that, on the face of it, the semiotic model offers a way of re-visiting the psychological analogies. However, I then argue that Peirce's semiotic account of the self suggests serious problems with both of the traditional approaches. I suggest that the semiotic approach may mediate between the psychological and social analogies, offering a way of speaking about Trinitarian personhood that incorporates the advantages of both while avoiding the unwanted implications of either. In the last sections of the book-proper I offer two guesses about Firstness (§7.2). The first is that the 'goodness' of creation is, in some sense, constituted by the reality of Firstness in the created order. The second is that the experience of Firstness is, in some way, a foretaste – a prolepsis – of the eschatological presence of God.

In Chapter 8, the Epilogue, I ask: what if the Church Fathers had known Peirce? It is a piece of pure playfulness. Just a guess.

PEIRCE'S METAPHYSICAL SEMIOTICS

> The entire universe…is perfused with signs, if it is not composed exclusively of signs.
>
> C. S. Peirce, 1906[1]

Semiotics is the field devoted to the study of signs – what they are, how they are used, and what must be true of a world in which signification, interpretation and meaning are possible. In this chapter I shall be offering an outline of Peirce's semiotics and the philosophy in which his semiotics is embedded. The first section (§1.1) offers some brief orientation. In §1.2 I introduce Peirce's system of metaphysical categories, Firstness, Secondness and Thirdness. In §1.3 I return to a more detailed outline of Peirce's semiotics, presented by way of an account of the development of his theory of signs. Finally, in §1.4, I connect Peirce's semiotics and categories with his theory of inquiry: his realism, fallibilism, pragmatism and evolutionary cosmology. By offering a survey of Peirce's metaphysics, semiotics, and theory of inquiry, the chapter as a whole prepares the ground for the 'semiotic model of the Trinity' that I propose in Chapter 2.

1.1   *A World Perfused With Signs*

We are surrounded by signs. Our lives are shaped by the responses – by the interpretations and misinterpretations – that we make to these signs. Some of the signs around us are 'natural' signs: we interpret a dark cloud as a sign of impending rain, prompting us to pick up an umbrella before leaving the house. Other signs have been produced with the intention of being interpreted – such as the words on this page. Some signs signify by convention, as when the colour green is taken to signify 'go'. Others signify by virtue of some kind of

---

[1] Charles S. Peirce, *The Essential Peirce: Selected Philosophical Writings, Volume 2 (1893–1913)*, edited by the Peirce Edition Project (Bloomington: Indiana University Press, 1998), 394.

resemblance to their object, as when we use a map to help us navigate unfamiliar terrain. Still others signify by virtue of a direct connection with the thing signified, as when smoke is taken to be a sign of fire. As Peirce put it, the universe "is perfused with signs" (EP 2.394). Yet we are so familiar with signs, and with the processes of interpreting signs, that the signs themselves tend to become transparent, invisible to us. We are not normally conscious of the environment of signs through which we move, or of the processes of interpretation which shape our lives. Still less do we stop to reflect on the extraordinary fact that somehow the world is such as to allow one thing to stand for (represent) something else.

Several of the Greek physicians, including Hippocrates (c. 430 BCE), showed an interest in the nature of signs,[2] and it seems possible that semiotics indeed originated as one of the branches of Greek medicine.[3] The practice of medicine relies heavily on the interpretation of a variety of kinds of sign. Medical students are taught that diagnosis depends on proper attention to the 'history', examination, and special investigations, all of which consist of signs of various kinds. The physician must first interpret the words spoken by the patient (as well as clues that may be given by facial expressions, tone of voice, posture, and so on). She will seek out any physical signs (visible rashes, palpable masses, auscultation of sounds with the stethoscope), and she may order special investigations which she will then be expected to have the expertise to interpret (blood results, radiographs, electrocardiogram, and so on). It is worth noting that the physician must thus interpret a combination of conventional signs (including the description of the problem as presented by the patient) and natural signs (the symptoms and signs of the disease). It is perhaps not surprising, then, that medicine provided a context in which the first reflections on the nature of signification began to emerge. The idea of a sign as

---

[2] Thomas Sebeok, *Contributions to the Doctrine of Signs*, 2nd ed. (Lanham: University Press of America, 1985), 4; ———, *A Sign Is Just a Sign* (Bloomington: Indiana University Press, 1991), 24.

[3] The term 'semiotic' derives from the Greek word for a sign, *semeion*. Some authors, including Peirce, prefer the spelling *semeiotic* (EP. 2.403). The current wide use of the term *semiotics* (as opposed to semiotic) only became common from the 1960s. With some misgivings about the accompanying loss of elegance I shall bow to common practice and allow myself to refer to the field concerned with the study of signs as 'semiotics'. Likewise, I shall use 'semiotic' as an adjective to label concepts or things pertaining to semiotic processes. Following Peirce, I shall refer to those sign-processes themselves as *semiosis* (EP 2.411).

the medical evidence of a disease was thus broadened by later Greek philosophers into the concept of signs as 'a way of proceeding by inference from what is immediately given to the unperceived'.[4]

Aristotle, the Stoics, the Epicureans and the Sceptics held in common the idea that semiotics is inseparable from logic.[5] Locke, himself a physician, followed in this tradition when, in his *Essay Concerning Human Understanding* (1690), he divided the sciences into natural philosophy, practical philosophy, and "semeiotica", or "the doctrine of signs". The business of the doctrine of signs, he says,

> is to consider the nature of signs, the mind makes use of for the understanding of things, or conveying its knowledge to others. For, since the things the mind contemplates are none of them, besides itself, present to the understanding, it is necessary that something else, as a sign or representation of the thing it considers, should be present to it: and these are *ideas*. ... The consideration, then, of ideas and words as the great instruments of knowledge, makes no despicable part of their contemplation who would take a view of human knowledge in the whole extent of it. And perhaps if they were distinctly weighed, and duly considered, they would afford us another sort of logic and critic, than what we have been hitherto acquainted with.[6]

Peirce's semiotics may be regarded as an attempt to explore Locke's prediction by developing a general theory of signs; in doing so he arguably became "the founder and first systematic investigator of modern semiotic".[7]

A starting point in the task of developing a general definition of a sign is contained in the medieval formula *aliquid pro aliquo*: something that stands for, or serves in place of, something else.[8] The basis of Peirce's contribution to semiotics was his proposal that this dyadic definition of a sign should be replaced with a triadic conception. Peirce suggested that signs consist of a relation between three elements: a

---

[4] Sebeok, *Contributions*, 47.

[5] Gérard Deledalle, *Charles S. Peirce's Philosophy of Signs: Essays in Comparative Semiotics* (Bloomington: Indiana University Press, 2000), 78.

[6] John Locke, *An Essay Concerning Human Understanding, Collated and Annotated with Prolegomena, Biographical, Critical and Historical by Alexander Campbell Fraser, in Two Volumes (Volume 2)* (1690; Oxford: Clarendon Press, 1894), Book IV, Chapter XXI, Section 4, pp. 461–62.

[7] Sebeok, *Contributions*, 5.

[8] Thomas A. Sebeok, "The Doctrine of Signs," *Journal of Social and Biological Structures* 9 (1986): 349; Winfried Nöth, *Handbook of Semiotics* (Bloomington: Indiana University Press, 1995), 84.

sign-vehicle (sometimes referred to as the *representamen*, or simply the sign), which stands for an *object*, and to which a response may be made by an *interpretant*. The sign (or at least the interpreted sign) is thus a triadic relation. The sign-vehicle does not signify anything in itself, but is able to signify something (an object) to the extent that its relation to the object is such that an interpreting entity or agent may make a purposeful response to the sign, where the fulfilment of that purpose depends on a certain relation between the sign-vehicle and the object. The exact pattern of relations between sign-vehicle, object, and interpretant that is required for a response to count as an interpretation, and for something to count as a (potentially interpretable) sign of an object, will be discussed further in §1.3 and re-visited in Chapter 4 (§4.2.1).

According to Peirce, the semiotic triad of sign-vehicle, object and interpretant is irreducible: "its three members are bound together by it in a way that does not consist in any complexus of dyadic relations" (EP 2.273). Peirce used the term *interpretant* in order to emphasize that signs do not depend on the presence of a conscious *interpreter*. The interpretative response may be a response chosen by a conscious agent, but it may equally be a response made unconsciously by an animal or plant,[9] or perhaps even by a very simple proto-biotic entity.[10] Peircean semiotics therefore contrasts with the implicitly anthropocentric tradition deriving from Ferdinand de Saussure (1857–1913), for whom the dyad of *signifier* and *signified* are necessarily held together in the mind of the sign-user.[11] According to Saussure, "The linguistic sign is a two-sided psychological entity", which "unites, not a thing and a

---

[9] Martin Krampen, "Phytosemiotics," *Semiotica* 36, no. 3/4 (1981); ———, "Phytosemiotics Revisited," in *Biosemiotics: The Semiotic Web 1991*, ed. Thomas A. Sebeok and Jean Umiker-Sebeok (Berlin: Mouton de Gruyter, 1992).

[10] I shall explore the possible relevance of interpretation for the study of the origin of life in Chapter 4 (§4.2). The position I adopt in this book contrasts with that of semioticians who hold that semiosis is a property of non-living, as well as living, entities. See, for example, John Deely, "Semiotics and Biosemiotics: Are Sign-Science and Life Science Coextensive?," in *Biosemiotics: The Semiotic Web 1991*, ed. T. A. Sebeok and J. Umiker-Sebeok (Berlin: Mouton de Gruyter, 1992).

[11] Sebeok, *Contributions*, 84. The divide between the Peircean and Saussurian traditions is often marked by a difference in terminology, the latter retaining Saussure's 'semiology' in preference to 'semiotics': Sebeok, *Contributions*, 53. Peirce would not have been aware of Saussure's semiology, which was outlined in lectures published posthumously.

name, but a concept and a sound-image".[12] Although a straightforward correspondence between the elements of Saussure's and Peirce's signs may be an oversimplification,[13] broadly speaking Saussure's signifier (a sound-image) corresponds to Peirce's sign-vehicle and Saussure's signified (a concept) to Peirce's interpretant.[14] What is omitted, therefore, in Saussure's concept of the sign is the object. According to Saussure, the signifier is *arbitrarily* related to the signified; the meaning of the signifier is defined only in relation to all the other signifiers (words) in the sign system (the language).[15] It is arguable that the tradition of (European) Continental philosophy culminating in, say, Jacques Derrida's 'deconstruction' of signification and meaning is heir to the Saussurian neglect of the connection that some signs have with a real 'external' world. Derrida denied that Saussure's 'signifieds' (the mental or psychological component of the dyad) are directly 'present' to the sign-user; rather, according to Derrida, the signified is just another signifier, taking its place among the other unanchored signifiers in the web of arbitrary signs.[16] Saussure and Derrida differ, then, in their understanding of the relation of the signifier to the signified, and of the signified to the mind. What they agree upon, or at least the direction in which Saussure's thought tends to lead, is a denial that signs can be anchored by referring to objects in the 'real' world.[17] This contrasts with Peirce's robust defence of semiotic realism, to which I shall return in §1.4.2. Furthermore, because Saussure's semiology is based on a psychological conception of the sign – an association of signifier and signified that occurs within the mind of the sign-user – the Saussurian tradition tends to adopt an anthropocentric perspective. Peircean semiotics, on the other hand, invites a much wider view of the kinds of entity and organism that can make interpretative responses to signs. I explore this aspect of the potential of Peirce's semiotics in Chapter 4, where I introduce the field of biosemiotics as a possible resource for a Christian theology of nature.

---

[12] Ferdinand de Saussure, *Course in General Linguistics*, ed. Charles Bally, Albert Sechehay, and Albert Riedlinger, trans. Wade Baskin (London: McGraw-Hill, 1959), 66.

[13] Deledalle, *Peirce's Philosophy of Signs*, 55.

[14] Cornelis de Waal, *On Peirce* (Belmont: Wadsworth, 2001), 70.

[15] Paul Cilliers, *Complexity and Postmodernism: Understanding Complex Systems* (London: Routledge, 1998), 39.

[16] Ibid., 42–43.

[17] Nöth, *Handbook of Semiotics*, 306.

Two further preliminary points about Peirce's semiotics are worth mentioning at this stage, not least because they will be of particular importance in developing my proposal for a 'semiotic model of the Trinity'. The first point is that Peirce's semiotic triads are not to be thought of as static structures but as moments in the dynamic flux of *semiosis*, a continuous process of semiotic growth (EP 2.411).[18] This point will become clearer when I examine Peirce's semiotics in more depth later in this chapter (§1.3). The second point is that Peirce's triadic semiotics is related closely to, and is underpinned by, his three-fold system of 'categories'. As I begin my more detailed survey of some of the main areas of Peirce's thought, it is to an outline of those three categories that I now turn.

1.2   *Peirce's Categories: Firstness, Secondness and Thirdness*

1.2.1   *Peirce's Gift to the World*

Peirce's lifelong passion for logic began when, at the age of 13, he read the textbook that his older brother was studying in his second year as a student at Harvard. In 1855 Peirce entered Harvard himself. He did not distinguish himself as a student, and developed a reputation for drunkenness.[19] On one occasion he was fined one dollar for vandalising a classroom bench. His instructor at the time, Charles Eliot, subsequently became President of Harvard, and resolutely opposed all proposals for Peirce to be appointed to the University staff. The incident foreshadowed a recurrent theme in Peirce's life; that his arrogance and impulsiveness were to stand in the way of him making a good impression with those on whom his career most depended.

Following his undistinguished period of undergraduate study at Harvard, Peirce began, in the 1860s, an intensive period of self-directed study of philosophy. This led to a series of Lowell Lectures in 1866, a significant honour for the then 26 year old self-taught philosopher. In 1867, after what Peirce described as "three years of almost

---

[18] See also Sebeok, *Sign Is Just a Sign*.

[19] During his undergraduate years Peirce also began to suffer from a painful facial condition that was to plague him for the rest of his life. He treated himself for this with ether and morphine, and may have subsequently also used cocaine. Brent suggests that the cause of the pain was trigeminal neuralgia (although this condition usually begins later in life). Joseph Brent, *Charles Sanders Peirce: A Life*, Revised and Enlarged ed. (Bloomington: Indiana University Press, 1998), 40.

insanely concentrated thought, hardly interrupted even by sleep" (CP 8.213), he presented his paper *On a New List of Categories* (EP 1.1–10) to the American Academy of Arts and Sciences. Peirce's aim was to identify a new set of universal *a priori* concepts intended to supersede those of Kant:

> This paper is based on the theory already established, that the function of conceptions is to reduce the manifold of sensuous impressions to unity, and that the validity of a conception consists in the impossibility of reducing the content of consciousness to unity without the introduction of it. (EP 1.1)

Peirce later described the paper as "my one contribution to philosophy" (CP 8.213) and the categories as "the gift I make to the world".[20] As T. L. Short points out, Peirce subsequently abandoned his attempt to derive the categories by demonstration of their *a priori* necessity, and rejected the Aristotelian logic of his argument, which he had inherited from Kant, in favour of a logic of relations.[21] In doing so he dropped two of his original five categories, 'Being' and 'Substance', from the list.[22]

In *A Guess at the Riddle* (1887–1888: EP 1.245–279), a partially completed draft for a book that was never published, Peirce gives the following introduction to the three categories that survived from the New List and continued to underpin his whole philosophical scheme:

> I make so much use of three-fold divisions in my speculations, that it seems best to commence by making a slight preliminary study of the conceptions upon which all such divisions must rest. I mean no more than the ideas of First, Second, Third, – ideas so broad that they may be looked upon rather as moods or tones of thought, than as definite notions, but which have great significance for all that. Viewed as numerals, to be applied to what objects we like, they are indeed thin skeletons of thought, if not mere words. (EP 1.247)

---

[20] Ibid., 70.

[21] T. L. Short, *Peirce's Theory of Signs* (Cambridge: Cambridge University Press, 2007), 31–32. Short suggests that when Peirce singles out *On a New List of Categories* as his most important contribution to philosophy he must have been referring to his scheme of categories in general rather than to the particular method of derivation attempted in that paper.

[22] Carl R. Hausman, *Charles S. Peirce's Evolutionary Philosophy* (Cambridge: Cambridge University Press, 1993), 107–08.

Peirce goes on to offer the following brief summary of the nature of the three categories:

> The First is that whose being is simply in itself, not referring to anything nor lying behind anything. The Second is that which is what it is by force of something to which it is second. The Third is that which is what it is owing to things between which it mediates and which it brings into relation to each other. (EP1.248)

Expanding on the category of Firstness, Peirce emphasizes that, by virtue of the fact that its nature is that of being abstractable from relation, origin, or reference to anything else, it can never be adequately grasped or described:

> The idea of the absolutely First must be entirely separated from all conception of or reference to anything else; for what involves a second is itself a second to that second. The First must therefore be present and immediate, so as not to be second to a representation. It must be fresh and new, for if old it is second to its former state. It must be initiative, original, spontaneous, and free; otherwise it is second to a determining cause. It is also something vivid and conscious; so only it avoids being the object of some sensation. It precedes all synthesis and all differentiation: it has no unity and no parts. It cannot be articulately thought: assert it, and it has already lost its characteristic of innocence; for assertion always implies a denial of something else. Stop to think of it, and it has flown! (EP 1.248)

Once we encounter any phenomenon that involves *otherness* or *difference* we meet the category of Secondness:

> The Second is precisely that which cannot be without the first. It meets us in such facts as Another, Relation, Compulsion, Effect, Dependence, Independence, Negation, Occurrence, Reality, Result. A thing cannot be other, negative, or independent, without a first to or of which it shall be other, negative, or independent.…We find secondness in occurrence, because an occurrence is something whose existence consists in our knocking up against it.…The idea of second must be reckoned as an easy one to comprehend. That of first is so tender that you cannot touch it without spoiling it; but that of second is eminently hard and tangible. It is very familiar too; it is forced upon us daily: it is the main lesson of life. (EP 1.248–249)

Finally, Thirdness is the category required to introduce the possibility of *mediation*, which cannot arise from Firstness and Secondness alone:

> First and Second, Agent and Patient, Yes and No, are categories which enable us roughly to describe the facts of experience, and they satisfy the mind for a very long time. But at last they are found inadequate, and the Third is the conception which is then called for. The Third is that which bridges over the chasm between absolute first and last, and brings them into relationship. (EP 1.249)

Whereas the category of Firstness is characterized by an "airy-nothingness", and Secondness by the "Brute Actuality of things and facts", Thirdness "comprises everything whose being consists in active power to establish connections between different objects" (EP 2.435). As such, Thirdness is the source of meaning and intelligibility in the universe.[23]

Peirce intended his categories to be comprehensive – sufficient to encompass all possible phenomena without further expansion:

> But it will be asked, why stop at three? Why not go on to find a // new conception in / distinct idea for // Four, Five, and so on indefinitely? The reason is that while it is impossible to form a genuine three by any modification of the pair, without introducing something of a different nature from the unit and the pair, four, five, and every higher number can be formed by mere complications of threes. (EP 1.251)

Furthermore, the categories are irreducible. One example Peirce used to illustrate this was the act of giving something to someone:

> The fact that A presents B with a gift C, is a triple relation, and as such cannot possibly be resolved into any combination of dual relations. . . . We cannot build up the fact that A presents C to B by any aggregate of dual relations between A and B, B and C, and C and A. A may enrich B, B may receive C, and A may part with C, and yet A need not necessarily give C to B. For that, it would be necessary that these three dual relations should not only coexist, but be welded into one fact. (EP 1.251–252)

1.2.2   A Priori *and Phenomenological Derivation of the Categories*

Peirce's interest in possible *a priori* derivation of the categories persisted into the 1880s with his use of a 'method of graphs',[24] developed by British mathematician J. J. Sylvester, a colleague of Peirce at

---

[23] See, for example, Robert S. Corrington, *An Introduction to C. S. Peirce: Philosopher, Semiotician and Ecstatic Naturalist* (Lanham: Rowman and Littlefield, 1993), 135.

[24] Don D. Roberts, *The Existential Graphs of C. S. Peirce* (The Hague: Mouton de Gruyter, 1973).

Johns Hopkins University.[25] The graphs simply consisted of dots and lines drawn on a piece of paper. According to Peirce, Firstness – sheer "something" – can be represented by a dot on the paper. However, the dot then divides the paper into two parts, one white and one black, thus introducing the otherness of Secondness. Furthermore, this otherness can be alternatively represented by two separate dots. A line between the two dots would then introduce the category of Thirdness, a form of mediation between the dots. Even if the line were not explicitly drawn in, there remains an unavoidable conception of a possible connection between the dots. Thirdness may thus be recognized as the basis of continuity or, more generally, of '*synechism*', as Peirce referred to the principle of the reality of continuities in nature.[26] Without Thirdness there would be no connections between any two entities or elements of the universe. Peirce believed, further, that it could be shown that the introduction of more dots and lines did not require the addition of any further categories beyond those of sheer being, otherness, and mediation.[27]

From the mid-1880s Peirce began to approach the same categories in more phenomenological terms. Peirce first used the term 'phenomenology' in 1902, a year that marked several new turns in his philosophical enterprise.[28] This was a year after Husserl first used the term, but it is doubtful that either was ever influenced by the other. Peirce's source for the term was Hegel, but by 1904 he had changed to using his own term, 'phaneroscopy'.[29] In a manuscript probably written for a lecture given at Harvard in 1903 (EP 2.145–159) he outlines the phenomenological approach as follows:

> Be it understood, then, that what we have to do, as students of phenomenology, is simply to open our mental eyes and look well at the phenomenon and say what are the characteristics that are never wanting in it, whether that phenomenon be something that outward experience forces

---

[25] de Waal, *On Peirce*, 10–11.
[26] "The tendency to regard continuity…as an idea of prime importance in philosophy may conveniently be termed *synechism*" (EP 1.313).
[27] de Waal, *On Peirce*, 11.
[28] Short, *Peirce's Theory of Signs*, 60–61.
[29] Peirce explained, "I believe in inventing new philosophical words in order to avoid the ambiguities of the familiar words. I use the word *phaneron* to mean all that is present to the mind in any sense or in any way whatsoever, regardless of whether it be fact or figment. I examine the phaneron and I endeavor to sort out its elements according to the complexity of their structure. I thus reach my three categories." (CP 8.213, written c. 1905).

upon our attention, or whether it be the wildest of dreams, or whether it be the most abstract and general conclusions of science. (EP 2.147)

According to Peirce, the phenomenological category of Firstness is that immediacy of experience to which an artist is particularly attuned (EP 2.147–150):

> When anything is present to the mind, what is the very first and simplest character to be noted in it, in every case, no matter how little elevated the object may be? Certainly, it is its *presentness*.... The present, being such as it is while utterly ignoring everything else, is *positively* such as it is. Imagine, if you please, a consciousness in which there is no comparison, no relation, no recognized multiplicity (since parts would be other than the whole), no change, no imagination of any modification of what is positively there, no reflexion, – nothing but a simple positive character. Such a consciousness might be just an odor, say a smell of attar; or it might be one infinite dead ache; it might be the hearing of [a] piercing eternal whistle. In short, any simple and positive quality of feeling would be something which our description fits, – that it is such as it is quite regardless of anything else. (EP 2.149–150)[30]

The phenomenological manifestation of the category of Secondness is the way in which experience imposes itself on us. As Peirce puts it in another manuscript written in 1903, but unpublished at the time:

> Of these three [categories], Secondness is the easiest to comprehend, being the element that the rough-and-tumble of this world renders most prominent. We talk of *hard* facts. That hardness, that compulsiveness of experience, is Secondness. (EP 2.268)

Peirce's emerging phenomenological approach to the categories can be seen in a manuscript probably written in 1894 (EP 2.4–10), in which he asks the reader to imagine a man who is in a "dreamy state", contemplating the quality of a particular red colour:

> Perhaps, when he gets tired of the red, he will change it to some other color, – say a turquoise blue, – or a rose-color; – but if he does so, it will be a play of fancy without any reason and without any compulsion. This is about as near as may be to a state of mind in which something is present, without compulsion and without reason; it is called *Feeling*. Except in a half-waking hour, nobody really is in a state of feeling, pure and simple. But whenever we are awake, something is present to the mind,

---

[30] Peirce's reference to the infinite duration of these hypothetical experiences of Firstness is presumably because the cessation of the experience would introduce the category of Secondness in the absence of the experience.

and what is present, without reference to any compulsion or reason, is feeling. (EP 2.3)

Peirce then asks the reader to suppose that the man is suddenly disturbed by the sound of a steam whistle, to which he reacts by putting his hands over his ears:

> This sense of acting and of being acted upon, which is our sense of the reality of things, – both outward things and of ourselves, – may be called the sense of Reaction. It does not reside in any one Feeling; it comes upon the breaking of one feeling by another feeling. It essentially involves two things acting upon one another. (EP 2.4–5)

The man now gets up to escape from the sound of the whistle through a door that was blown shut just as the whistle started. However, when he opens the door he finds that the whistle stops, and when he shuts the door again the whistle recommences. At this point the phenomenological category of Thirdness is introduced:

> He asks himself whether the shutting of the door had anything to do with it [the commencement of the whistle]; and once more he opens the mysterious portal. As he opens it, the sound ceases. He is now in a third state of mind: he is *Thinking*. That is, he is aware of learning, or of going through a process by which a phenomenon is found to be governed by a rule, or has a general knowable way of behaving. He finds that one action is the means, or middle, for bringing about another result. This third state of mind is entirely different from the other two. In the second there was only a brute sense of force; but now there is a sense of government by a general rule. In Reaction only two things are involved; but in government there is a third thing involved which is a means to an end. (EP 2.5)

Thus while feeling is a manifestation of Firstness, and brute reaction is a manifestation of Secondness, intelligibility is a manifestation of the phenomenon of Thirdness. Peirce also hints here at a connection between Thirdness and generality ("a general knowable way of behaving")[31] and purposefulness ("a means to an end"). I shall explore the relation between Thirdness, generality and purpose further in §4.2.1.

When Peirce's interest shifted from *a priori* to phenomenological derivations of the categories, logic and mathematics did not cease to have a place in his new science of phaneroscopy; rather, they assumed

---

[31] For Peirce's justification of the connection between Thirdness and generality see EP 2.181–186.

a different role. In 1902, as well as re-conceiving his method of deriving the categories, Peirce developed a new 'architectonic', or architecture of sciences (CP 1.180–283). According to this scheme the sciences were envisaged as organising themselves into an order of priority, the order of the main divisions being (1) mathematics, (2) philosophy, and (3) the special sciences.[32] Philosophy was subdivided into (a) phenomenology, (b) the normative sciences, and (c) metaphysics, and the normative sciences were further subdivided into (i) aesthetics, (ii) ethics, and (iii) logic. Logic includes, or is constituted by, semiotics: because all thought takes place in signs, logic "may be regarded as the science of the general laws of signs" (EP 2.260).

In pursuing his phenomenological investigation of reality, Peirce could not afford to assume the actuality of anything particular in the world, since that would beg the very questions that his investigation was intended to settle. Instead, then, he turned to mathematics, the scientific discipline that deals solely in possibilities rather than actualities, to give a provisional structure to his analysis of experience. The aspect of mathematics that he chose for this purpose was the logic of relations ('logic' referring here to the formal mathematical study of relations as opposed to the science of right reasoning that constitutes the third subdivision of the normative sciences). Short emphasizes, however, that for Peirce this choice no longer needed to be justified on *a priori* grounds. Nothing determines that phaneroscopy must proceed on the basis of the logic of relations rather than some other part of mathematics:

> Peirce's choice of how to proceed with phaneroscopic analysis can be explained but it has no *a priori* justification. Its explanation is that he knew already what its outcome would be; he knew that the analysis of experience in relational terms was fruitful, that it permits a defense of his realism and in other ways supports a coherent philosophy. That does not preclude other categorical schemes, which might be illuminating in their own way. Peirce's phaneroscopic theses are like hypotheses in natural science: based on observation, they are nonetheless not fully justified by observations already made but must prove themselves by their fruitfulness for further research, in competition with alternative hypotheses.[33]

---

[32] This summary follows Peirce's overview of his architectonic in *An Outline Classification of the Sciences*, largely written in 1903 (EP 2.258–262). The designation by numerals and letters is my own.

[33] Short, *Peirce's Theory of Signs*, 65–66.

1.2.3   *Further Features of Firstness*

The *a priori* and phenomenological derivations of the categories both give rise to the conclusion that the presence of one of the categories always carries with it the latent involvement of the others. In the mathematical derivation, as discussed above, the presence of a dot on a piece of paper, representing Firstness, necessarily gives rise to the categories of Secondness and Thirdness. In phenomenology, although each of the categories can be abstracted – or, to use Peirce's term, *prescinded* (EP 1.2–3) – from experience, no experience can in fact avoid being intruded upon by the others. As Peirce said in one of his 1903 Harvard lectures, *The Categories Defended* (EP 2.160–178): "Not only does Thirdness suppose and involve the ideas of Secondness and Firstness, but never will it be possible to find any Secondness or Firstness in the phenomenon that is not accompanied by Thirdness" (EP 2.177). Peirce notes the similarity of this position to that of Hegel. However, according to Peirce, Hegel's 'absolute idealism' gives priority to Thirdness (i.e., rationality or mind), over the categories of Firstness and Secondness. In contrast, Peirce wishes to uphold the genuineness of Firstness and Secondness in their own right:

> Let the Universe be an evolution of Pure Reason if you will. Yet if while you are walking in the street reflecting upon how everything is the pure distillate of Reason, a man carrying a heavy pole suddenly pokes you in the small of the back, you may think there is something in the Universe that Pure Reason fails to account for; and when you look at the colour *red* and ask yourself how Pure Reason could make *red* to have that utterly inexpressible and irrational positive quality it has, you will perhaps be disposed to think that Quality and Reaction have their independent standings in the Universe. (EP 2.177–178)

As I shall discuss further in Chapter 2 (§2.4) this characteristic of irreducible distinctiveness combined with mutual interdependence has strong similarities to the conceptual requirements of the Christian doctrine of the Trinity. Those similarities will be central to my 'semiotic model' of the Trinity, in which I shall suggest that Firstness, Secondness and Thirdness have non-trivial parallels with scriptural and traditional accounts of the Father, Son and Spirit respectively. The role of the category of Firstness in that model may prove to be the most difficult to grasp, and the same will probably be true also when it comes to my proposal (in Chapter 3) for understanding the Incarnation in terms of a kind of sign (an 'iconic qualisign') that manifests Firstness

in a unique way. At this stage it is therefore worth emphasizing three things about Firstness.

First, it is important to recognize that many of the examples of Firstness that come most easily to mind are, to use Locke's terminology, 'secondary qualities'.[34] That is, they are qualities such as colours, tastes and smells which depend not only on the physical properties of an entity external to the perceiver, but also on the mechanisms of perception. It might be asked, do secondary qualities constitute genuine examples of Firstness, given that they are not 'pure' properties of the entity in question? The answer to this depends on whether one takes perception-dependent (or mind-dependent) phenomena to be real. Peirce himself saw no reason to deny the reality of mind-dependent aspects of experience. If we accept Peirce's broad conception of reality, to be discussed in §1.4.2, then there is no difficulty in regarding secondary qualities (as well as primary qualities) as genuine manifestations of Firstness.

Second, it may be pointed out that many qualities are context-dependent. For example, consider the quality of colour in a particular area of a painting. Artists are well aware that the colour of this particular patch will be influenced by the colours in its proximity, by the lighting conditions in which the painting is hung, by the angle from which it is viewed, and so on.[35] This does not, however, undermine the concept of Firstness as applied to such qualities. What it tells us is that although Firstness is phenomenologically (and logically) prior to Secondness and Thirdness, it is not necessarily causally prior. In other words, the operation of Secondness and Thirdness can give rise to new forms of Firstness. Consider, for example, Mark Rothko's later abstract expressionist paintings. Rothko's expanses of colour seem to invite us to attend to, to be absorbed into the presence of, nothing other than the quality of that colour, prescinding from any differences or oppositions (though interestingly many of the paintings in this phase of his work consist of two opposed fields of colour). However, these expanses of 'pure' colour-quality are in fact produced by

---

[34] John Locke, *An Essay Concerning Human Understanding, Collated and Annotated with Prolegomena, Biographical, Critical and Historical by Alexander Campbell Fraser, in Two Volumes (Volume 1)* (1690; Oxford: The Clarendon Press, 1894), Book II, Chapter VIII, Section 9; p. 169.

[35] I thank Charles Hewlings and Gina Medcalf for helpful discussions about this and related points.

a very deliberate process (Thirdness) of successive application of lay-ers of colour of different hues. The causal light-absorbing properties (Secondness) of these multiple pigment layers are what give rise to the distinctive colour-qualities of the finished work. The lesson to be learned from this is that Firstness may continually and spontaneously 'precipitate out' of the interactions of Secondness and Thirdness. The logical priority of Firstness should not be misunderstood to mean that all phenomena originate causally from Firstness.

Another way of putting this is to say that Firstness may 'emerge' from contexts of Secondness and Thirdness without being ontologi-cally or epistemologically reducible to those contexts. For example, the 'wetness' of water and other liquids is a property which may be con-sidered to be – as a quality prescinded from all of its known effects – a manifestation of Firstness. The quality of wetness 'supervenes' on the causal and law-determined interactions of H_2O molecules in a way that is dependent on but cannot be reduced to mere knowledge of those interactions. We might know everything there is to know about the charge, geometry, orientation, momentum, and internal vibration of each water molecule in a container but we would not thereby have an account of the quality of its wetness.[36]

Firstness, then, may spontaneously arise out of contexts given by the lawfulness (Thirdness) and actuality (Secondness) of the world. When Firstness arises, however, it has a logical and phenomenological priority over the other two categories. The third point about Firstness is related to the first and second. It is that Firstness can be simple or compound (my own terminology, not Peirce's). For example, just as a patch of colour within a painting can have a quality of its own, so may the painting as a whole create and convey a total quality. Perhaps one might call this a 'holistic quality'. Consider a painting that will be familiar to many philosophers, Raphael's *The School of Athens* (1510–11).[37] Plato holds his *Timaeus* and points upwards; Aristotle holds his *Ethics* and gestures downwards. Around them various groups are engaged in earnest debate, while a few individuals seem to be pursuing their particular inquiries in isolation. If we prescind from the scene as

---

[36] Cf. Terrence W. Deacon, "Emergence: The Hole at the Wheel's Hub," in *The Re-Emergence of Emergence: The Emergentist Hypothesis from Science to Religion*, ed. Philip Clayton and Paul Davies, *Emergence* (Oxford: Oxford University Press, 2006), 127. I discuss the concept of emergence further in Chapter 5, §5.2.2.
[37] Easily accessible via internet search engines.

a whole, stripping away its representational meanings and contrasts of mood and movement, we might find ourselves absorbed in the sheer qualities of the redness of Plato's robe, or the blue of Aristotle's cape. (Recall Peirce's man in a dreamy state in the passage quoted in §1.2.2, contemplating alternately a particular red colour followed by a turquoise-blue). On the other hand, if we step back and take in the painting as a whole we may be inclined to recognize it as conveying a single total quality, the quality of the urgency, intensity and diversity of the whole enterprise of philosophy. A picture, as the saying goes, is worth a thousand words. The point to which I wish to draw attention is that this total quality, which is a manifestation of Firstness, is the product of a compound of various manifestations of Thirdness (such as the postures of the two main figures *representing* the opposing philosophical emphases of Plato and Aristotle) and Secondness (minimally, the fact that the painting is composed of more than one colour; more fully, the contrasts of movement and mood noted above). And, of course, it would be possible for someone to look at the painting for a long time – perhaps even to be an expert on some aspect of it – and yet miss this total 'mood' of the whole.

1.3 *Peirce's Semiotics*

1.3.1 *The Development of Peirce's Theory of Signs*

Having introduced Peirce's categories I am now in a position to turn to a more detailed outline of Peirce's semiotics. A possible starting point for any theory of signs is the medieval formula according to which a sign is defined as something that stands for, or serves in place of, something else (*aliquid pro aliquo*).[38] Peirce proposed that, in place of this dyadic conception, signification should be understood in terms of a triadic relation between a *sign-vehicle* (sometimes referred to as the representamen or simply the sign), an *object*, and an *interpretant*. In a much-quoted definition, found in a fragmentary manuscript from around 1897, Peirce writes that, 'A sign, or *representamen*, is something which stands to somebody for something in some respect or capacity' (CP 2.228). Any reader who has attempted to venture into the dense thicket of Peirce's semiotic thought will know, however, that the going

---

[38] Sebeok, "Doctrine of Signs," 349; Nöth, *Handbook of Semiotics*, 84.

soon becomes much more difficult. To take another of Peirce's much referred-to definitions, a sign is,

> Anything which determines something else (its *interpretant*) to refer to an object to which itself refers (its *object*) in the same way, the interpretant becoming in turn a sign, and so on *ad infinitum*. (CP 2.303)

Part of the difficulty is that Peirce's semiotic theory developed through several stages over a period of decades; if this is not appreciated then various aspects of his semiotics, taken out of the context of the various developments in his thinking, will appear contradictory. This problem is compounded by the fact that most of Peirce's mature thoughts on semiotics were not published in his lifetime and have to be pieced together from a variety of unpublished sources. It is therefore extraordinarily difficult for the non-specialist to achieve a coherent understanding of Peirce's semiotic theory directly from the primary sources.

For these reasons anyone who wishes seriously to engage with Peirce's semiotics must be deeply indebted to recent scholarship in the field, and especially, in my judgement, to T. L. Short's remarkable reconstruction of the development of Peirce's thinking in this area.[39] In this section, therefore, I shall not attempt to do much more than summarize Short's account of this development. If there is any originality in this section it will be only that I have attempted to present this summary in a way that helps to make particularly clear the structure of Short's account. Thus the content of the following is drawn directly from Short's work, but the structure (my labelling with letters and numerals) is my own.

Let us start with Peirce's early ideas about semiotics, formulated in the 1860s. Around this time Peirce held that:

a. A representation (or sign, sign-vehicle, representamen) is something that *stands for* something (the object) to someone who so interprets it – more precisely, to the 'interpretant', i.e., representation consists of a triadic relation.

---

[39] For a very succinct and clear summary of the development of Peirce's theory of signs see T. L. Short, "The Development of Peirce's Theory of Signs," in *The Cambridge Companion to Peirce*, ed. Cheryl Misak (Cambridge: Cambridge University Press, 2004). Similar material is presented Short, *Peirce's Theory of Signs*, Chapter 2. The latter work offers a comprehensive account of Peirce's semiotics.

b. The interpretant is the response formed by the interpreter to the sign, and this interpretant is *another sign* (representation) of the same object.
c. All thoughts are signs.
d. Combining a, b, and c, Peirce arrives at the view that every thought interprets a preceding thought and is interpreted by a succeeding thought. Each thought is thus both a sign and an interpretant.
e. Each thought is therefore a moment in an infinite *regressus*, and infinite *progressus*, of thought-signs.

Peirce's early theory of signs faced 3 major problems. I shall label these problems with the early theory P1 to P3:

> P1. The early theory fails to explain how signs signify. This is because it explains signification by reference to an interpretant, which mediates between sign and object. However, the interpretant is defined as another sign (i.e., sign-vehicle, representamen) of the same object. Therefore "the problem of accounting for significance is not solved but is merely handed on, from one sign to the next".[40]

> P2. The early theory does not explain how sense can be distinguished from nonsense. Nonsense sentences can endlessly be translated into (interpreted by) other nonsense phrases. According to Peirce's early account signification is defined by interpretation. Therefore no reason can be given for preferring sense to nonsense (one interpretation over another). One of the reasons that this problem arises is that since, in Peirce's early semiotics, there is no reference to a relation of sign to object prior to interpretation, there are no constraints on interpretation which could provide the basis of criteria for distinguishing between useful and useless interpretants of that sign. Signification therefore appears to be entirely subjective: erroneous interpretation is impossible.[41]

> P3. Just as the infinite *progressus* of thought-signs in the early theory is unsatisfactory (P1), so is the infinite *regressus*. If all thought signs are traceable back to preceding thought-signs then thought never makes contact with anything external to thought. Objects in the world are forever outside the chain of thoughts interpreting thoughts.

From the mid-1880s onwards Peirce successively corrected each of these flaws, starting with the third. I shall label these solutions S1, S2 and S3, corresponding to P1, P2 and P3 respectively.

---

[40] Short, "Development of Peirce's Theory," 217.
[41] Ibid., 218.

S3. Peirce solved the third problem before the other two. In 1885, as a consequence of his work in logic,[42] Peirce recognized a class of sign – the index – which (in contrast to his previous conception of thought-signs) is not general, but consists, in Short's words, "in a particular or existential relation between individuals".[43] For example, in an indexical sign the relation between the sign and object may be causal or physical (the relation of the direction of the weathervane to the wind), or 'compulsive' (a poke in the back calling one's attention to an as yet unidentified cause; a pointing finger drawing our attention to look in a particular direction).[44]

Peirce's recognition of the importance of indexes had several consequences:

(i) The concept of the index allowed Peirce to dispense with the idea that every sign must be preceded by an earlier sign. As Short puts it:

Peirce's discovery of the indexical sign enabled him to relinquish the thesis that every cognition must be preceded by a cognition, *ad infinitum*. A cognition combines indexes and concepts. The index picks out a particular of an otherwise signified type, which is then made the subject of a predicate…It follows that if the index is directly connected to its object, then so is the cognition, through the index it contains. Thus, a cognition does not have to be the interpretant of a preceding cognition in order to have an object.[45]

(ii) The discovery of indexes extended Peirce's theory of signs beyond thought and language to natural signs: e.g., smoke as a sign of fire, fever as a sign of disease.

(iii) Indexes are interpretable by thought, but particularly "by that component of thought which consists in an *act* of attention".[46] It follows that (contrary to Peirce's earlier view) an interpretant need not necessarily be another *sign*. This was not made explicit until 1904, when Peirce allowed that interpretants could be feelings, actions, or thoughts. In 1907 he named these types of interpretant emotional, energetic and logical respectively. (Later still, he recognized that even

---

[42] Specifically, his discovery, with his student O. H. Mitchell (and independently of Frege), of the logical concept of quantification. Ibid., 219.
[43] Ibid., 221.
[44] Ibid., 220–21.
[45] Ibid., 221.
[46] Ibid., 222. Italics mine.

'logical' interpretants need not be thoughts. These developments will be outlined further under S1.)

(iv) If interpretants need not necessarily be thoughts it follows that interpretations can be made by non-human interpreters. A deer is startled by a noise and looks up, its act of attention being an interpretation of the noise as a sign of a possible predator (without implying any clear thought of the concept of a predator).[47] In Chapter 4 (§4.2) I shall explore the hypothesis that a capacity for interpretation is a fundamental feature of all living things, and that searching for the simplest entities that can interpret (indexical) signs in their environments may give rise to a new approach to the investigation of the origin of life.

(v) Peirce maintained his view that signification is a triadic relation (between sign, object and interpretant). However, the relation between sign and object in an index is dyadic. It follows that the two relations are not the same: the (triadic) relation of signification depends on a prior relation of the sign to its object.[48] This insight underpins Peirce's classification of signs into icons, indexes and symbols, this division of Peirce's taxonomy of signs picking out the kind of relation that obtains between the sign and the object.[49]

> S2. Peirce's 1885 solution (outlined above) to P3, the problem of the infinite *regressus* of interpretations, led in 1896 to a partial solution to P2.[50] Because Peirce now saw interpretation as based on a prior relation of the sign to the object he was now able to identify significance with interpretability rather than with actual interpretation. What makes a sign (potentially) meaningful is not that it *is* interpreted, but that it *could* be so interpreted.[51] This allows the (potential) meaning of the sign

---

[47] Ibid.

[48] Ibid., 223. Note that this prior relation of sign to object in an indexical sign does not imply that indexes can be interpreted infallibly. A sign can mistakenly be taken to be an index of an object of which it is, in fact, never an index. Or a sign that is sometimes (or usually) an index of an object may, in a particular instance, not be an index of that object. The possible types of misinterpretation of signs will be explored further in Chapter 4 (§4.2.1).

[49] Peirce's taxonomy of signs will be discussed further below and in Chapter 3 (§3.1.2).

[50] I say partial because it seems to me that the full solution to P2 also required the solution to P1, to be outlined below.

[51] This was connected with a general move in Peirce's thought towards affirming the reality of potentiality, as reflected in his construal of physical laws in terms of what "would-be". Short, *Development of Peirce's Theory*, 225.

to be dissociated from whether or not it is actually interpreted (in that way).[52] This partially solves P2 because it allows that if for some reason interpretation ceases (i.e., the potentially endless chain of semiosis is interrupted) then the sign immediately prior to this interruption would not cease to be meaningful by virtue of not having been (actually) interpreted. So it is no longer necessary to postulate an (actual) infinite *progressus* of signs to secure meaning at any particular point in the chain of semiosis.

S1. The solution to P1 depended, likewise, on the earlier solutions to P3 and P2 in 1885 and 1896 respectively. As noted above, a corollary of the discovery of indexes, whose interpretants are often an *act* of attention, is that not all interpretants are themselves thought-signs. In 1904 Peirce suggested that interpretants can be feelings, actions or thoughts (the distinction between emotional, energetic and logical interpretants), though at this stage he continued to maintain that the interpretants of thoughts are always further thought-signs. In 1907, however, his semiotic underwent a revolution by virtue of his abandoning the idea that all logical interpretants are thought-signs.[53] He proposed, instead, a form of logical interpretant that would define the ultimate meaning of the thought-sign. He called this the 'ultimate logical interpretant'. The ultimate logical interpretant cannot be another thought-sign because in that case the meaning of this thought sign would have to be explicated further by more thought-signs, and so on *ad infinitum*. Peirce therefore proposed that ultimate logical interpretants are *habits*. Thus, for example, the meaning of the concept of heat is given by the habit(s) of conduct (including mental habits) that I would be disposed to if I have a full understanding of the concept of heat.[54]

The 1907 revolution in Peirce's theory of signs thus allowed his semiotics to link up (at last) with his pragmatism (on which more below, §1.4.2). In doing so he was able to solve P1 (the problem of showing how signs signify without making a circular appeal to signification) and the remaining aspect of P2 (how to distinguish meaningful speech or sign-interpretation from nonsense).[55] As Short puts it:

---

[52] This became the basis of Peirce's subsequent distinction between immediate (potential) and dynamic (actual) interpretants. Ibid.

[53] Ibid., 226.

[54] Ibid., 227.

[55] Note that ultimate logical interpretants are the ultimate guarantor of meaning for words and thoughts which might otherwise appear to issue in an infinite progressus of words and thoughts (i.e., the ultimate guarantor of 'intellectual' meaning). Words or thoughts that are correctly interpreted by emotional interpretants (e.g., feeling angry in response to unjustified chastisement), or energetic interpretants (e.g., automatically acting in response to a command), do not need an ultimate logical interpretant (general conditional habit or disposition) as their guarantor of ultimate meaning.

…by this revolution of 1907, we break out of the circle of words, of words interpreting words and thoughts interpreting thoughts. The pragmatic distinction between meaningfulness and meaninglessness becomes this: meaningful speech and thought have ultimate logical interpretants, while nonsensical speech and thought, though they may always be translated into further thoughts and words, lack ultimate logical interpretants. Being interpretable by habits of action, meaningful speech engages with the non-verbal world: for example, assertions may be acted upon and tested against the consequences of those actions.[56]

Short acknowledges that even the concept of the ultimate logical interpretant was not sufficient to complete an account of *how* signs signify. The final piece of the jigsaw was also taken in 1907 in Peirce's recognition that interpretation is always *end-directed*. The habits of conduct to which a concept properly leads, and which give that concept its ultimate meaning, must be habits of conduct which serve a purpose (in some sense of that word) for the interpreter.[57] I shall discuss the relevance of teleology and purpose to signification in detail in Chapter 4 (§4.2.1).

1.3.2   *Semiotics and the Categories*

Peirce's semiotics is underpinned by, and thoroughly infused with, his three-fold scheme of categories. It might be thought that the most obvious locus of the three categories would be the triad of sign-object-interpretant, and indeed the categories are surely in play here. One may certainly say that signification would not occur unless the sign-vehicle were able to stand over against the object, and this otherness of the sign from the object is a manifestation of Secondness. Things may be less clear if we wish to ask whether it is the sign or the object that manifests Firstness. The answer, perhaps, is 'neither' and 'both'. It is not that Firstness is exclusive to either the sign or the object. As we shall see when we come to Peirce's taxonomy of signs, there is a sense in which the nature of the sign-vehicle, considered in itself, is an aspect of Firstness. But the object also has Firstness about it: the

---

Similarly, interpretation of non-verbal (or non-mental) signs may come to an end in feelings (e.g., a response to a work of art) or actions (e.g., a predator's response to a sign of prey) without requiring an ultimate logical interpretant to ground their ultimate meaning. See ibid., 229.

[56] Ibid.

[57] Ibid., 230. Note that, in order to signify, the sign-relations formed by emotional and energetic interpretants must also, in some sense, serve a purpose for the interpreter.

property of the object to be represented by the sign, the quality that is the 'respect' in which the sign represents the object, is also a manifestation of Firstness.

If the otherness of the sign from its object is a manifestation of Secondness it may seem natural to suppose that the interpretant introduces Thirdness, and hence mediation into the relation. However, the relation of the semiotic triad to the categories is not quite that straightforward. As I shall discuss in greater depth in Chapter 4 (§4.2.1), the interpretant is always a *change of state* of the interpreting entity. A change of state, which by definition involves a difference between a preceding and succeeding state, is, in itself, a manifestation of Secondness. However, interpretation is always purposeful, and purposes (as we shall see in §4.2.1) are always *general* types of outcome. Since generality (and therefore teleology and purpose) are manifestations of Thirdness (EP 2.181–186), the interpretant brings Thirdness to the sign relation not only by being a third element in the triad, but, more importantly, by bringing generality and purpose into the relation. In doing so the interpretant allows the sign to mediate between the object and the interpreting entity: the interpreting entity undergoes a change of state (the interpretative response, or interpretant) in response to the sign which, in some sense, stands for an object not immediately perceived. It is true to say, then, that the category of Thirdness enters the sign-relation with the interpretant, but not necessary to say (simply) that this is because the interpretant itself acts as the mediator within the triad.[58]

The semiotic triad is by no means the only manifestation of the categories in Peirce's semiotics. Firstness, Secondness and Thirdness are equally – perhaps even more – evident in the structure of Peirce's taxonomy of signs, which he outlines in his 1903 paper *The Nomenclature and Divisions of Triadic Relations, as Far as They Are Determined* (EP 2.289–299). The best known of Peirce's division of signs concerns the relationship between the sign and the object. According to Peirce's scheme, this relationship can be either iconic, indexical or symbolic. An *icon* is a sign in which the sign-vehicle has some qualitative resemblance to the object – as Peirce put it, "community in some quality"

---

[58] Cf. Short, *Peirce's Theory of Signs*, 30. See also, for example, Vincent M. Colapietro, *Peirce's Approach to the Self: A Semiotic Perspective on Human Subjectivity* (New York: State University of New York Press, 1989), 18.

(EP 1.7) – and thus rests on the category of Firstness (EP 2.291). An example used by Peirce is a "material image" such as a painting which, though possibly incorporating conventional or symbolic forms of signification, at a basic level signifies by virtue of some kind of likeness between the image and its object (EP 2.273–274). An *index* is a sign in which the sign-vehicle stands for the object by virtue of a direct connection of a sort that manifests the brute actuality of Secondness (EP 2.291). For example, a weather-vane is an index representing the direction of the wind (EP 2.8); the direction in which the weather-vane points is forced on it by the thing it represents. Finally, a *symbol* is a sign, such as a noun in a language, whose sign-vehicle stands for the object by virtue neither of resemblance or causation. Peirce notes that etymologically a symbol should be a "throwing together" by agreement, as in a contract or convention (EP 2.9). In a symbol the sign and object are joined together by this convention, the rule mediating between sign and object. Thus, where icons manifest Firstness and indexes manifest Secondness, symbols are a manifestation of Thirdness. As Peirce puts it:

> A regular progression of one, two, three may be remarked in the three orders of signs, Likeness [icon], Index, Symbol. The likeness has no dynamical connection with the object it represents; it simply happens that its qualities resemble those of that object, and excite analogous sensations in the mind for which it is a likeness. But it really stands unconnected with them. The index is physically connected with its object; they make an organic pair. But the interpreting mind has nothing to do with this connection, except remarking it after it is established. The symbol is connected with its object by virtue of the idea of the symbol-using mind, without which no such connection would exist. (EP 2.9)

1.3.3 *More Kinds of Sign and Further Iterations of the Categories*

In the same way that Peirce classified signs according to the nature of the relationship between the sign-vehicle and the object, he also devised a three-fold division depending on the nature of the sign-vehicle itself, giving rise to the distinction between qualisigns, sinsigns and legisigns. A qualisign is a sign-vehicle that signifies by embodying the very *quality* that it represents, and is thus a manifestation of Firstness. An example is the colour embodied in a colour-sample of paint or cloth. A sinsign is a *singularly occurring* sign, such as a leaf blown by the wind. As such, the leaf signifies the presence of a breeze, though not by any convention or rule; because the movement of the leaf signifies

by virtue of the brute actuality of its occurrence it is a manifestation of Secondness. A legisign is a sign replicated according to some rule for the purpose of signifying, as when a letter or word is written on a piece of paper or in some other medium.[59] A legisign manifests Thirdness because it is a product of a form of lawfulness and generality, arising from the law-like application of the rule for producing legisigns of that general type. I shall discuss the distinctions between qualisigns, sinsigns, and legisigns in more depth in Chapter 3 (§3.1.2), where this aspect of Peirce's taxonomy of signs will form the basis of my proposal for a semiotic approach to the Christian concept of Incarnation.

A further three-fold division rests on how the sign is presented to the interpretant, whether as a rheme, dicent or argument. A rheme corresponds, in more familiar terminology, to a term. It can be neither true nor false: it simply is, and is therefore a manifestation of Firstness. The word 'diamond' is a term. On the other hand the proposition 'diamonds are hard' is a 'dicent'. A dicent can be true or false; it asserts something, and thereby has the character of Secondness. Whereas a dicent asserts something, an argument (Peirce's term has the same meaning as its usual connotation) appeals to the reason of the interpreter for its interpretation. An argument is therefore a manifestation of Thirdness. The syllogism, "diamonds are hard, this is a diamond, therefore this is hard", is a sign (representing something about this particular object) which has the form of an argument.

In summary, in addition to the Firstness, Secondness and Thirdness involved in the semiotic triad itself (i.e., the triad of sign-object-interpretant), the categories also ramify through the classification of sign types. Reading horizontally across the top row of Table 1, the classification divides signs according to the nature of the sign-vehicle in itself

Table 1: Peirce's Taxonomy of Signs

	1stness: Sign-vehicle itself	2ndness: Sign-Object relation	3rdness: Relation to interpretant
1stness	Qualisign	Icon	Rheme
2ndness	Sinsign	Index	Dicent
3rdness	Legisign	Symbol	Argument

---

[59] The rule by which a legisign is replicated is not the same as the rule by which a symbol stands for its object – for a discussion of the difference see §3.1.2.

(Firstness), the relation between the sign and object (Secondness), and the relation of the sign to the interpretant (Thirdness). Reading down each column, the types of sign within each of the aforementioned divisions also correspond to the categories. Within the division according to the sign-vehicle there are qualisigns (Firstness), sinsigns (Secondness) and legisigns (Thirdness). Within the division according to the relation between the sign and object there are icons (Firstness), indexes (Secondness) and symbols (Thirdness). Within the division concerning the relation between the sign and the interpretant there are rhemes (Firstness), dicents (Secondness) and arguments (Thirdness). Any sign must combine one of the types of sign vehicle from the first column, one of the sign-object relations from the second column, and one of the sign-interpretant relations from the third column. For example, a rhematic indexical legisign partakes of Firstness in respect of its relation to the interpretant, Secondness in respect of the kind of sign-object relation, and Thirdness in respect of the sign-vehicle itself.[60]

Not all of the 27 combinations of sign types (3x3x3, one from each column of Table 1) are logically possible. For example, a symbol stands for its object by virtue of a convention; it cannot therefore be a sinsign (since a sinsign signifies singularly, not by virtue of a rule) or a qualisign (since a qualisign signifies only by embodying the quality signified, which cannot therefore be arbitrarily assigned by a convention). In total, 10 of the 27 numerically possible combinations are logically permissible.[61]

Peirce further extended this ten-element classification of signs to sixty-six by proposing that each of the ten basic signs could have one

---

[60] An example of a rhematic indexical legisign is a demonstrative pronoun (EP 2.294–295). The demonstrative pronoun 'this' is a rheme (it does not make an assertion or argument); it is an index (because grammatically it serves to *point* to a nearby noun or pronoun); and it is a legisign (because it is reproduced according to a rule, by writing the letters T-H-I-S).

[61] Working from Table 1.1, the allowable combinations (where the first numeral refers to the first column so that 1 is a qualisign, 2 is a sinsign, 3 is a legisign, the second numeral refers to the second column, and so on) are: 111 (qualisigns); 211 (iconic sinsigns); 221 (rhematic indexical sinsigns); 222 (dicent indexical sinsigns); 311 (iconic legisigns); 321 (rhematic indexical legisigns); 322 (dicent indexical legisigns); 331 (rhematic symbols); 332 (dicent symbols); 333 (arguments). See Short, *Peirce's Theory of Signs*, 237. Note that where the possible combinations with any given element are restricted it is not necessary to give the full description of the sign. For example, all qualisigns (111) are iconic rhemes, and may therefore be referred to without loss of precision merely as qualisigns rather than as rhematic iconic qualisigns.

of two different types of object (the immediate and dynamic objects), and one of three different types of interpretant (immediate, dynamic and final interpretants). Briefly, the immediate object is the object as represented by the sign (hence a manifestation of Secondness) whereas the dynamic object is the object as it really is in itself (hence a manifestation of Firstness).[62] An immediate interpretant is a *possible* interpretant of a sign, prior to any actual interpretation. Any sign may have several possible immediate interpretants: a particular instance of smoke rising may be both a sign of fire and a sign that someone is in need of rescue. A dynamic interpretant is an interpretation actually made. I may correctly interpret the smoke as a sign of fire but fail to appreciate that it has been made as a signal of distress. Only one of the immediate interpretants of the fire has then been actualized as a dynamic interpretant. A final interpretant is the interpretant that is ideally adequate to the purpose for which the sign is being interpreted. If I am a forest ranger, concerned only with the wellbeing of the forest (to which a certain incidence of spontaneous fires is perhaps beneficial), then counting instances of forest fires may be my sole purpose in interpreting the presence of smoke. Interpreting the smoke as a sign of fire may be the final interpretant of this sign for my purposes. If, on the other hand, I am coordinator of a mountain rescue team, the final interpretant of the smoke must include more than simply an inference of the presence of a fire.[63] Immediate, dynamic and final interpretants are manifestations respectively of Firstness (the possibility of interpretation), Secondness (the actuality of interpretation – this interpretation rather than that one), and Thirdness (the purpose of interpretation). It is worth noting, further, that this division of kinds of interpretant is distinct from the recognition that interpretants may be feelings (manifesting Firstness), actions (manifesting Secondness) or thoughts (manifesting Thirdness) (§1.3.1).

As I have already mentioned, Peirce's taxonomy of signs will be central to my proposal for a semiotic approach to the Incarnation to be developed in Chapter 3. However, the reader may be relieved to know that there I shall be working with Peirce's basic scheme (especially the icon-index-symbol and qualisign-sinsign-legisign trichotomies) and shall largely set aside his distinctions between immediate

---

[62] Short, *Peirce's Theory of Signs*, 191–96.
[63] Cf. Ibid., 187–90. The example is my own.

and dynamic objects and immediate, dynamic, and final interpretants. My purpose in introducing his full taxonomy here is to show how thoroughly Peirce's semiotics reflects and is shaped by his scheme of categories. At every turn, from the basic semiotic triad, through the triplets of icon-index-symbol, qualisign-sinsign-legisign, and rheme-dicent-argument, and on into the distinctions made between different kinds of object and interpretant, we find ever more iterations and ramifications of the categories. In the kaleidoscopic refractions of Firstness, Secondness and Thirdness that we find in Peirce's semiotics we can see, perhaps even more strikingly than in the analysis of any other aspect of experience, how the categories mutually indwell one another. In Chapter 2 (§2.4) I shall suggest that this dynamic interpenetration of the categories in the world of signs offers an analogy for the perichoretic indwelling of the Trinitarian persons in the being of God. In Chapter 5 I shall pursue the yet bolder hypothesis that the categories, including their manifestation in the complex and beautiful structures of semiotics, are 'vestiges of the Trinity in creation'.

1.4   Peirce's Theory of Inquiry

1.4.1   Fallibilism and Inference

Peirce's semiotics was developed in the context of his theory of inquiry, which I shall outline in the following sections. A negative reason for attending to Peirce's thinking on the nature of inquiry is that the school of philosophical 'pragmatism', of which he is often regarded as the founder, has subsequently tended to follow some distinctly un-Peircean paths. It is therefore worth emphasizing the distinctive shape of Peirce's particular version of pragmatism in order to protect the argument that I shall be developing from any spurious association with philosophical anti-realism. More positively, some of the elements of Peirce's theory of inquiry will be important for my proposal as a whole. For example, his concept of 'abduction', will play a specific role in the approach to theological anthropology that I suggest in Chapter 3 (§3.4.1). More generally, his non-foundationalist epistemology ('fallibilism') will inform my overall approach to the relation between scientific, philosophical, and theological inquiry (to be examined in Chapter 6).

Peirce introduced his ideas about the nature of knowledge in an important series of six papers which appeared in the journal *Popular*

Science Monthly in 1877 and 1878.[64] The second of these papers, *How to Make Our Ideas Clear*, included, in effect, his initial definition of pragmatism, though he did not use that term in the series.[65] Peirce's later thinking on the nature of inquiry is represented in a series of seven lectures given at Harvard in 1903 (EP 2.133–241). William James, Peirce's closest friend, had persuaded Harvard to allow Peirce to give a series of lectures on pragmatism, of which James had already acknowledged Peirce to be the founder. Peirce's financial situation at this stage of his life had become dire; an application to the Carnegie Institution for funding that would have allowed him to produce a systematic outline of his whole system of philosophy had just been turned down, and James hoped that payment from the lectures would ease his predicament.[66] Unfortunately Peirce's audiences found the lectures obscure and even James felt unable to recommend their publication. The difficulty seems to have been that the exposition of his theory of inquiry was now deeply embedded in his unfamiliar and largely unpublished ideas about the categories.[67] Some of his later thinking on pragmatism, or "pragmaticism" as he had now come to call it, was published in three articles in *The Monist* in 1905 and 1906;[68] however, ill-health prevented completion of the projected series of five articles.[69]

The starting point of Peirce's theory of inquiry is his idea that inquiry should be understood as an attempt to settle opinion in the face of doubt:

> The irritation of doubt causes a struggle to attain a state of belief. I shall term this struggle *inquiry*.... The irritation of doubt is the only immedi-

---

[64] These papers are: *The Fixation of Belief* (EP 1.109–123); *How to Make Our Ideas Clear* (EP 1.124–141); *The Doctrine of Chances* (EP 1.142–154); *The Probability of Induction* (EP 1.555–169); *The Order of Nature* (EP 1.170–185); and *Deduction, Induction and Hypothesis* (EP 1.186–199).

[65] Indeed, his uncharacteristic diffidence in not using the term or claiming it for himself, either in publications or correspondence, until after 1900, remains something of a puzzle. Brent, *Peirce*, 274–75.

[66] Ibid., 290. I will outline the biographical background to this state of affairs in §5.1.1.

[67] Ibid., 291.

[68] The first two of these articles are: *What Pragmatism Is* (EP 2.331–345), and *Issues of Pragmaticism* (EP 2.346–359). Two drafts of the third article are presented in EP 2.360–397.

[69] Brent, *Peirce*, 297.

ate motive for the struggle to attain belief....With the doubt, therefore, the struggle begins, and with the cessation of doubt it ends. Hence, the sole object of inquiry is the settlement of opinion. (EP 1.114–115)

According to Peirce, this definition "sweeps away, at once, various vague and erroneous conceptions of proof" (EP 1.115). Included among these is the Cartesian, rationalist, strategy of attempting to doubt everything until an indubitable foundation for reasoning is secured (EP 2.336). In Peirce's view, this would amount to a pretence of doubt, rather than the "real and living doubt" capable of causing the irritation which leads to the struggle to attain belief (EP 1.115). Peirce also rejects pure empiricism on the grounds that putting our faith in the reliability of "the first impressions of sense" overlooks the fact that "our very percepts are the results of cognitive elaboration" (EP 2.336). Hence Peirce emphatically rejects the foundationalist idea that knowledge must rest on "ultimate and indubitable propositions" (EP 1.115):

> But in truth, there is but one state of mind from which you can "set out," namely, the very state of mind in which you actually find yourself at the time that you do "set out," – a state in which you are laden with an immense mass of cognition already formed, of which you cannot divest yourself if you would; and who knows whether, if you could, you would not have made all knowledge impossible to yourself? (EP 2.336)

Science, as Peirce put in a lecture delivered in 1898,

> ...is not standing upon the bedrock of fact. It is walking upon a bog, and can only say, this ground seems to hold for the present. Here I will stay till it begins to give way. (EP 2.55)

Peirce's 'fallibilism' (CP 1.55), or non-foundationalism as it would nowadays be called, is further evident in his distinctive account of the processes of inference. According to Peirce there are three kinds of inference: *deduction, induction*, and *hypothesis* (or *abduction*, as he came to refer to the latter; EP 1.189). Each of these types of inference is fallible, the nature of the fallibility attached to each kind of inference being closely related to its power to give rise to new knowledge. Peirce illustrates the difference between these types of inference using the following examples, each of which consists of three elements: a rule, a case, and a result (EP 1.187–188). Suppose we have a bag containing beans, all of which are white (rule). If I take a handful of beans from the bag (case) I can be sure that all of the beans in my hand will be

white (result). This inference, which starts from a rule and a case and moves to a result, is a *deduction*. On the other hand if I take a handful of beans from a bag whose contents are unknown to me (case), and all of the beans in my hand are white (result), then I may infer that all of the beans in the bag are white (rule). This inference, which starts from a case and a result and moves to a rule, is an *induction*. It is a less secure form of reasoning than a deduction. However, whereas a deduction merely states a necessary consequence of the premises, an induction potentially results in genuinely new knowledge. Fallibility is the price of new understanding. The third type of inference arises if, say, I know that all of the beans in a particular bag are white (rule), and I find a handful of beans near the bag which are also white (result). I may then form the *hypothesis* that the beans came from this particular bag (case). A hypothesis, which starts from a rule and a result and moves to a case, is the least reliable type of inference, but potentially the most powerful in generating new knowledge. Furthermore, a hypothesis which might be regarded as weak in isolation may be supported by its relation to other hypotheses (EP 1.195–197). This idea, that theories are tested as an interrelated web of hypotheses, rather than individually and in isolation from one another, anticipates subsequent developments in the philosophy of science.[70]

Peirce identified deductions with what Kant called *analytic* inferences and, in a proposal for which he claimed priority (EP 1.194), suggested that inductions and hypotheses represented divisions of Kant's *synthetic* inferences (EP 1.189). Only synthetic inferences advance knowledge; analytic inferences merely spell out the necessary implications of the premises. Peirce notes that Kant had begun by asking how we can make synthetic *a priori* judgements (EP 1.167). That is, how can we obtain knowledge that is more than just an unpacking of what follows logically from our starting point (i.e., is synthetic rather than analytic), but which does not rest on empirical evidence (i.e., is *a priori*). Kant's answer is that what appears universally and necessarily true of the world is dependent on the way in which the mind imparts structure to experience (EP 1.168). Peirce, however, is interested in what he believes to be an even more fundamental question than the possibility of the 'synthetic *a priori*': he asks how synthetic judgements

---

[70] The similarities between Peirce's thought and later developments in the philosophy of science will be noted in §1.4.3.

of *any* sort are possible (EP 1.167). In fact Peirce regarded this as such a profoundly puzzling question that he felt some respect for (though not ultimate agreement with) the view that every true induction is an "immediate inspiration from on high" (EP 1.168). (I shall reflect on the relevance of this remarkable capacity of creatures to acquire new knowledge of the world in §3.4.1).

Peirce declined to claim that the method of induction rests on any overall uniformity in nature (EP 1.178). As I shall discuss further in Chapter 5 (§5.1), his evolutionary cosmology allowed for the continuing operation of pure chance in the universe. If the justification for our trust in the methods of induction and hypothesis cannot lie in any fact concerning the uniformity in nature, where can such justification be found? Peirce's answer is that it can only lie in the reliability of the application of the methods themselves:

> We may express this by saying that in the case of analytic inference we know the probability of our conclusion (if the premises are true), but in the case of synthetic inferences we only know the degree of trustworthiness of our proceeding. (EP 1.169)

Peirce therefore concludes that:

> As all knowledge comes from synthetic inference, we must equally infer that all human certainty consists merely in our knowing that the processes by which our knowledge has been derived are such as must generally have led to true conclusions. (EP 1.169)

As he put it in a letter to a friend:

> My great word is that the thing to go your bottom dollar on should not be a doctrine but a method. For a vital method will correct itself and doctrines too.[71]

Rather than being founded on a "principle of Nature" (i.e., an underlying uniformity or reliability in nature) the trustworthiness of synthetic inferences thus rests on the fact that they are found to be useful as a guide to action (EP 1.179–182). Belief in the existence of, for example, space, time and force, which Kant would regard as synthetic *a priori* concepts, are in fact inferences whose evolutionary usefulness has been such that they have become embedded in the constitution

---

[71] Letter to Judge Francis C. Russell, 17 September 1892, quoted in de Waal, *On Peirce*, 27.

of every animal (EP 1.180). Natural selection, not some *a priori* cor-
respondence with nature, is the explanation of these apparently innate
beliefs, although Peirce adds that:

> …it does not seem sufficient to account for the extraordinary accuracy
> with which these conceptions apply to the phenomena of Nature, and it
> is probable that there is some secret here which remains to be discov-
> ered. (EP 1.181–182)

As he put it in his 1908 paper *A Neglected Argument for the Reality
of God*, the ability fruitfully to hypothesize about the explanation of
things seems to be part of what is distinctive about humans:

> Animals of all races rise far above the general level of their intelligence
> in those performances that are their proper function, such as flying and
> nest-building for ordinary birds; and what is man's proper function if it
> be not to embody general ideas in art-creations, in utilities, and above
> all in theoretical cognition? To give the lie to his own consciousness
> of divining the reasons of phenomena would be as silly in a man as it
> would be in a fledgling bird to refuse to trust to its wings and leave the
> nest. (EP 2.443)

A consequence of Peirce's theory of inquiry is that epistemology is
not merely concerned with *human* knowledge, but places human
knowing within the context of a struggle of inquiry which character-
izes the whole of the evolutionary process. Peirce regarded this episte-
mology as building on the "common-sensism" of eighteenth century
Scottish philosophers such as Thomas Reid (1710–1796) and James
Beattie (1735–1803),[72] according to whom morality and reasoning are
grounded in species-wide innate forms of knowledge.[73] The collection
of "indubitable beliefs" that form the starting point of our reasoning
are the product of our evolutionary history. However, the fact that
such beliefs have arisen through natural selection by no means guar-
antees their truth (EP 2.353). As Peirce put it in his 1877 paper, *The
Fixation of Belief*:

> We are, doubtless, in the main logical animals, but we are not perfectly
> so.…Logicality in regard to practical matters is the most useful quality
> an animal can possess, and might, therefore, result from the action of
> natural selection; but outside of these it is probably of more advantage to
> the animal to have his mind filled with pleasing and encouraging visions,

---

[72] See EP 2.347; 2.541.
[73] Corrington, *An Introduction to Peirce*, 53–54.

independently of their truth; and thus, upon unpractical subjects, natural selection might occasion a fallacious tendency of thought. (EP 1.112)

1.4.2 *Pragmatism and Realism*

In *How to Make Our Ideas Clear* (1878) Peirce argued that genuine inquiry could aim at nothing other than the settlement of belief (EP 1.129). Belief is a "rule of action" which "appeases the irritation of doubt" (EP 1.129). In other words, the meaning of a belief is defined by the way in which it influences our actions, with 'action' being understood here in a broad sense, which includes thoughts (EP 1.130–131). The idea that the meaning of a concept is determined by the way in which it influences our actions leads Peirce to his famous 'pragmatic maxim':

> Consider what effects, which might conceivably have practical bearings, we conceive the object of our conception to have. Then, our conception of these effects is the whole of our conception of the object. (EP 1.132)

Peirce illustrates this principle by reference to the concept of *hardness*. When we say that a diamond is hard we mean that were we to try to scratch the diamond with various other substances we would find that most of them would not leave a mark (EP 1.132). Initially Peirce was happy to allow that it follows from the pragmatic maxim that one cannot describe a particular diamond as hard until it is tested in this way. Later he rejected the nominalist implications of such a view, affirming instead that the concept of the diamond's hardness refers to what *would* happen were an attempt to be made to scratch it.[74]

On the face of it the pragmatic maxim is similar to the verification principle of the logical positivists, which states that a proposition is only meaningful to the extent that it can be empirically verified.[75] Indeed, the members of the 'Vienna Circle', who mainly knew of Peirce's philosophy through the 1877–1878 *Popular Science Monthly* articles in which his pragmatism is expressed in particularly positivist terms, regarded themselves as successors of Peirce.[76] However, Peirce's

---

[74] Cheryl Misak, "Charles Sanders Peirce (1839–1914)," in *The Cambridge Companion to Peirce*, ed. Cheryl Misak (Cambridge: Cambridge University Press, 2004), 3; cf. Short, *Peirce's Theory of Signs*, 229.

[75] de Waal, *On Peirce*, 28.

[76] Brent, *Peirce*, 119.

pragmatism differs from logical positivism in at least two respects.[77] First, whereas logical positivism narrowed the definition of what could be considered scientific to the exclusion of metaphysics, Peirce wished to extend the boundaries of scientific investigation far enough to include metaphysics. Peirce argued that metaphysics is not intrinsically inaccessible or difficult:

> Metaphysics, even bad metaphysics, really rests on observations, whether consciously or not; and the only reason that this is not universally recognised is that it rests upon kinds of phenomena with which every man's experience is so saturated that he usually pays no particular attention to them.[78]

Second, Peirce does not regard sensory experience as the only kind of experience relevant to the pragmatic testing of a hypothesis. The pragmatic maxim also applies whenever a belief is tested by producing consequences that are, as Cheryl Misak puts it, "compelling, surprising, impinging, unchosen, involuntary, or forceful".[79] These modes in which the consequences of a belief may be encountered and tested are manifestations of Secondness; they are experiences of coming up against something external to the belief itself, something to which the belief is answerable. Unlike logical positivism, which gives priority to sensory experience in the testing of hypotheses, Peirce's pragmatic maxim is thus applicable to areas of inquiry in which such experience is less directly involved. Thus, in addition to allowing inquiry into metaphysical questions, Peirce's pragmatism encompasses the methods by which, for example, mathematical and moral beliefs and hypotheses may be evaluated.[80]

　　If Peirce's pragmatism is not a form of logical positivism, does it not represent a form of epistemological relativism? Peirce suspected some of his followers, such as William James and John Dewey, of developing his pragmatism in just such a direction. By emphasizing the connection between the meaning of a proposition and its practical consequences, the school of pragmatism developed by these philosophers appeared to reject the idea that inquiry is concerned with discovering underlying

---

[77] Misak, *Charles Sanders Peirce*, 4–5.
[78] CP 6.3. I shall discuss Peirce's approach to metaphysics in Chapter 6, §6.1.
[79] Misak, *Charles Sanders Peirce*, 5.
[80] Cheryl Misak, "C. S. Peirce on Vital Matters," in *The Cambridge Companion to Peirce*, ed. Cheryl Misak (Cambridge: Cambridge University Press, 2004), 154–58.

truths about the world. Peirce sought to distance himself from such developments, announcing in *What Pragmatism Is* (1905) that,

> ...the writer, finding his bantling 'pragmatism' so promoted, feels that it is time to kiss his child good-bye and relinquish it to its higher destiny; while to serve the precise purpose of expressing the original definition, he begs to announce the birth of the word 'pragmaticism,' which is ugly enough to be safe from kidnappers. (EP 2.334–335)

Peirce, then, was a fallibilist, or non-foundationalist (§1.4.1), and a pragmatist. It is often assumed that non-foundationalism (the denial of indubitable starting points for inquiry) and pragmatism (understood in terms of a kind of instrumentalism about knowledge), imply a non-realist attitude to epistemology. Peirce thought otherwise, developing a novel account of realism which led him to describe himself as a "scholastic realist of a somewhat extreme stripe" (CP 5.470).

As discussed above, Peirce held that our "indubitable beliefs" are not necessarily reliable. We must therefore, according to Peirce's account, learn to pursue the struggle of inquiry, which is precipitated by the irritation of doubt, in such a way as to attain beliefs which may be held more securely. Peirce suggests that the fixation of belief may occur in several ways. The method of "tenacity" involves an individual choosing a belief and adhering to it regardless of the opinion of others or evidence to the contrary (EP 1.115). This method is attractive in that it tends to lead to peace of mind, but ultimately fails when the beliefs that it leads to are confronted by alternative evidence and opinion (EP 1.116). The method of "authority", which in Peirce's view has tended to be the basis on which political and theological doctrines are upheld, has the advantage that it leads to fixation of belief in a community, not just in the individual (EP 1.117). As a result it is superior to the method of tenacity, having "over and over again worked the most majestic results": whole civilisations have been founded on it, though at the cost of appalling cruelties exercised in the process (EP 1.118). In the end, however, institutions cannot regulate the thought of individuals on every subject: people will be left to draw their own conclusions about some things, and these will eventually cast doubt on the beliefs fixed by authority. This fact leads us to seek a method by which people can reach their own opinions on things through their "natural preferences", starting from basic propositions which seem "agreeable to reason" (EP 1.119). This *a priori* method is preferable to those of tenacity or authority because, on the face of it, it is less subject to

biases of caprice or accident. Unfortunately, however, what is agreeable to reason often turns out to be very much a matter of taste or fashion (EP 1.119).

Because of the problems inherent in the methods of tenacity, authority, or *a priori* reasoning, Peirce concludes that,

> To satisfy our doubts, therefore, it is necessary that a method should be found by which our beliefs may be caused by nothing human, but by some external permanency – by something upon which our thinking has no effect. (EP 1.120)

The only fully satisfactory method for fixing belief is therefore the method of "science", which differs from the other methods of fixing belief because it rests on the concept of "reality":

> Its fundamental hypothesis, restated in more familiar language, is this: There are real things, whose characters are entirely independent of our opinions about them; those realities affect our senses according to regular laws, and, though our sensations are as different as our relations to the objects, yet, by taking advantage of the laws of perception, we can ascertain by reasoning how things really are, and any man, if he have sufficient experience and reason enough about it, will be led to the one true conclusion. (EP 1.120)

Peirce immediately acknowledges that the concept of reality cannot be taken for granted. If the hypothesis of reality is what supports the scientific method then the scientific method cannot be used to verify the hypothesis of reality. Nevertheless, the scientific method does not lead to any conclusions that contradict the hypothesis of reality and, furthermore, everybody applies the 'scientific' method to various everyday situations, and such general experience confirms its fruitfulness (EP 1.120).

Because of his emphasis on the communal nature of inquiry, and the idea that such inquiry can be imagined to continue indefinitely into the future, Peirce is able to avoid the non-realist epistemological implications of the pragmatism of many of his followers. According to Peirce:

> The opinion which is fated to be ultimately agreed to by all who investigate, is what we mean by the truth, and the object represented in this opinion is the real. That is the way I would explain reality. (EP 1.139)

Peirce adds a note to explain that by "fate" he means "that which is sure to come true". He goes on to argue that, while this view of truth

may appear to make the truth dependent on what we think about it, such a conclusion ignores the fallibilistic and communal basis of pragmaticism:

> It may be said that this view is directly opposed to the abstract definition which we have given of reality, inasmuch as it makes the characters of the real to depend on what is ultimately thought about them. But the answer to this is that, on the one hand, reality is independent, not necessarily of thought in general, but only of what you or I or any finite number of men may think about it; and that, on the other hand, though the object of the final opinion depends on what that opinion is, yet what that opinion is does not depend on what you or I or any man thinks. Our perversity and that of others may indefinitely postpone the settlement of opinion; it might conceivably cause an arbitrary proposition to be universally accepted as long as the human race should last. Yet even that would not change the nature of the belief, which alone could be the result of investigation carried sufficiently far; and if, after the extinction of our race, another should arise with faculties and disposition for investigation, that true opinion must be the one which they would ultimately come to. (EP 1.139)

In his review of an 1871 edition of the works of George Berkeley (EP 1.83–105), Peirce outlines how his conception of reality relates to the debate between realists and nominalists. Traditionally the difference between realists and nominalists is regarded as being that the former, but not the latter, believe in the reality of *universals* (EP 1.88). For example, the realist holds that the concept of a horse is a real entity, whereas the nominalist believes that only the flesh and blood animals are real, the concept "horse" being a product of the mind. Peirce challenges the traditional idea that realists and nominalists are primarily divided by the status of universals. In doing so he rejects the commonly supposed view that the debate concerns the status of the Platonic Forms (EP 1.91); that is, whether the Forms are "real", or merely the product of the mind. According to Peirce the difference between realists and nominalists resides, more fundamentally, in their respective views of reality. Peirce argues that the debate hinges on two different conceptions of 'reality'. In the first definition, reality is that which is external to the mind but impinges on it, giving rise to perceptions of the external world. This, according to Peirce, is the nominalist conception of reality (EP 1.88). The second definition, the realist position, regards reality as the object of the 'final opinion': the opinion upon which all enquirers will eventually agree if investigation is pursued sufficiently far. On Peirce's view, then, nominalists

regard universals as non-real because universals are a product of the mind rather than something that impinges on the mind from outside; realists accept that universals are real because their view of reality does not exclude mind-dependent entities (EP 1.90). Peirce sides with the realists (defined by him as above), claiming that it makes no more sense to assume that something is not real because it is dependent on thought than it would to say, for example, that the quality of redness is not real because it depends on sight (EP 2.343).

Peirce's understanding of the difference between realists and nominalists is reflected in the distinction he makes between *reality* and *existence*. Something *exists* – from the Latin *ex* (out) *sistere* (to stand firm) – if it comes up against and reacts with other things of the same class (EP 2.342). On the other hand the concept of *reality* – which Peirce points out was not an ancient idea but developed in the thirteenth century – refers to that which "has such and such characters, whether anybody thinks it to have those characters or not" (EP 2.342).[81] When Peirce says that reality is independent of what "anybody" thinks, he means independent of what you or I or any particular person thinks. On the other hand, reality is connected with thought in the sense that reality is the state of things referred to by the beliefs on which the opinion of the community of inquirers will tend to converge (EP 1.54–55).[82] Whereas realism and idealism are normally held to be mutually exclusive alternatives, Peirce's definition of reality therefore makes him simultaneously a realist and an idealist, or to use the term he borrowed from Friedrich von Schelling, an *objective idealist* (EP 1.293).[83] Furthermore, if reality is defined as that which would be the object of the final opinion, it is not possible to conceive of anything real that is ultimately beyond knowing. Peirce therefore denies that ultimately there can be any meaningful distinction between the

---

[81] The difference between existence and reality is illustrated by the fact that Peirce refers to the *reality* of God, but not to the *existence* of God (CP 6.494).

[82] In arguing for the communal nature of knowledge in his 1868 paper *Some Consequences of the Four Incapacities Claimed for Man*, Peirce refers to the "community of philosophers" (EP 1.29). However, the phrase "community of inquirers", which is often used in connection with Peirce, does not appear to have been used by Peirce himself (I am grateful to Arnold Shepperson and Patrick Coppock for confirming this point: personal communications January 2003. In order to emphasize the very general nature of the "struggle for belief", which Peirce called "inquiry" (§1.4.1) I shall, however, follow other Peirce scholars in referring to Peirce's concept by the phrase "community of inquirers". Brent, *Peirce*, 88.

[83] Ibid., 210.

way things are in themselves and the manner in which it is possible to know them; that is, between Kant's *noumenal* and *phenomenal* worlds. Peirce confesses that he was "a pure Kantist" until he was "forced by successive steps into Pragmaticism", and urges that:

> The Kantist has only to abjure from the bottom of his heart the proposition that a thing-in-itself can, however indirectly, be conceived... and he will find himself to have become a Critical Common-Sensist. (EP 2.354)

Peirce's notion of the final opinion, as originally formulated, is not entirely satisfactory. One difficulty to which it gives rise is the problem of 'lost facts'. Peirce himself acknowledged that he might be asked what he would have to say "to all the minute facts of history, forgotten never to be recovered, to the lost books of the ancients, to the buried secrets" (EP 1.139). On Peirce's original view, these buried secrets and lost facts would not count as real even though they actually occurred. Conversely, it appears that were the community of inquirers to come to permanently hold an opinion that is at variance with the actual facts then this opinion would, even though false, be held by definition to correspond to reality. Christopher Hookway has argued that, although Peirce's original formulations left him open to these criticisms, he later modified his view of the relation between reality and the final opinion of the community of inquirers. In particular, Peirce came to treat the idea of an ultimate convergence of opinion as a regulative ideal rather than as an inevitable historical occurrence.[84] He therefore came to regard reality as the *explanation* for observed convergences of opinion, rather than making the convergence of opinion constitutive of reality.[85] This allowed Peirce to maintain his opposition to the Kantian notion of realities which are (even in principle) unknowable while avoiding the unwanted implication that reality is determined by thought. By qualifying his commitment to the idea of the final opinion Peirce also made room for the possibility that the opinions reached by inquirers will depend on their particular concerns and purposes. As a result, Peirce was now able to affirm the reality of things that are "relative to thought"

---

[84] Christopher Hookway, "Truth, Reality, and Convergence," in *The Cambridge Companion to Peirce*, ed. Cheryl Misak (Cambridge: Cambridge University Press, 2004), 134.

[85] Ibid., 140–41.

or which depend upon particular human interests.[86] This move away from an "absolute conception of reality" allowed Peirce to reinforce his affirmation of the reality of secondary qualities, such as colours, which do not exist entirely independently of our sensory and perceptual apparatus, and of concepts that are relative to human ways of life.[87]

1.4.3 Faith, Hope, and Charity: Virtues of the Community of Inquirers

Peirce approached the question of the nature of inquiry not only from the point of view of a philosopher but also as a working scientist. From 1861 to 1891 he was employed by the United States Coast Survey, the foremost American scientific institution of the time. He also worked for the Harvard Observatory until this appointment at the Coast Survey became nominally full time in 1871, his hopes of a permanent academic appointment in philosophy at Harvard University having failed to materialize.[88] Peirce's work for the Coast Survey involved the use of pendulums to measure the force of gravity at different locations for the purpose of mapping the precise shape of the earth. Peirce represented the Coast Survey on five assignments to Europe, as a result of which his pendulum research gained him an international scientific reputation. In addition, his work for the Harvard Observatory resulted in several contributions to astronomy. These included observations of the relative brightness of stars, measurements which led him to be among the first to hypothesize that our galaxy has the shape of a disc. In addition, Peirce became the first scientist to use the wavelength of light to provide a precise measurement of the length of the metre.

Peirce's scientific work gave him first-hand experience of the communal nature of inquiry. In *The Doctrine of Chances* (1878), one of the six papers of the *Popular Science Monthly* series (§1.4.1), he identified three 'sentiments' as requirements of reasoning, namely, "interest in an indefinite community, recognition of this interest being made supreme, and hope in the unlimited continuance of intellectual activity" (EP 1.150). He went on to remark that "these three sentiments seem to be pretty much the same as that famous trio of Charity, Faith, and Hope, which, in the estimation of St. Paul, are the finest and great-

---

[86] Ibid., 136.
[87] Ibid., 130–38.
[88] Brent, *Peirce*, 75.

est of spiritual gifts" (EP 1.150; cf. 1 Cor. 13:13). Peirce seems to be suggesting that 'charity' reflects the pragmatist's (pragmaticist's) recognition of the essential role of the community of inquirers: the move towards the truth that is approached in the long run is, in Peirce's view, a social rather than an individual venture. 'Faith' would then correspond to a commitment to pursue the struggle for belief in such a way as to make the interests of the community supreme. And 'hope' is the appropriate attitude to truth: we expect our knowledge to approximate ever more closely to a real state of affairs and hope that our opinions will converge on the truth in the infinite long run.

As I have noted above, this emphasis on the unlimited pursuit of inquiry and its projected convergence towards a destined final opinion is characteristic of Peirce's earlier formulation of the relation between truth (the final opinion) and reality (the object of the final opinion). Taking into account Peirce's later qualifications of the concept of the final opinion (§1.4.2), perhaps the philosopher would have been willing to consider a revised view of the parallels between his theory of inquiry and Paul's trio of virtues. I suggest that 'faith' corresponds to Peirce's fallibilism and pragmati(ci)sm. Our concepts and beliefs must be tested by their practical consequences: by acting on our beliefs (where action is conceived very broadly including, for example, performing thought experiments) we open them to the possibility of refutation. Our beliefs are always fallible, and inquiry consists in responding to the irritation of doubt. But in order to pursue any inquiry we must (provisionally) put our faith in a background system of beliefs, a background that we trust is becoming ever more secure. 'Hope', on this alternative view, corresponds to Peirce's later formulation of the concept of reality. We anticipate that there will be convergence towards agreement on particular questions that we choose to investigate long enough and well enough, and we attribute such convergence to the independence of reality from whatever any individual happens to think. Hope, in other words, is a reflection of a commitment to the hypothesis of reality. Finally, 'charity' would then correspond to the recognition that, because of the fallibility of reasoning and the finiteness of our individual capacities for inquiry, we must submit ourselves to, and recognize ourselves as part of, the wider community of inquirers. Only by doing so may our individual beliefs be tested and corrected over time.

It is remarkable how far Peirce's pragmaticism, especially in its mature form outlined above, addresses many of the issues which were

subsequently to occupy twentieth century philosophers of science.[89] Like Karl Popper's falsificationist account of science, Peirce's philosophy is *fallibilist*.[90] Unlike Popper's account, but in common with the ideas of Pierre Duhem and Willard Quine, Peirce's epistemology is *non-foundationalist*.[91] Like Thomas Kuhn, Peirce's notion of the community of inquirers emphasizes the social nature of science.[92] Unlike Kuhn, or at least unlike the way in which Kuhn's notion of scientific paradigms has tended to be interpreted,[93] Peirce's pragmaticism carries a strong commitment to epistemological realism. Peirce's understanding of the means by which knowledge progresses has much in common with Imre Lakatos's notion of a modifiable web of inter-related hypotheses that are tested as a whole rather than individually.[94] Peirce's view thus avoids what Lakatos referred to as Popper's "naïve falsificationism" (according to which scientific hypotheses are refuted by single contradictory observations, which is rarely the case in practice) and anticipates the idea of a "progressive research programme" (in which theories consist of webs of mutually supportive hypotheses which are judged on their capacity to generate further insight). In his 1868 paper *Some Consequences of Four Incapacities* Peirce recommended that:

> Philosophy ought to imitate the successful sciences in its methods, so far as to proceed only from tangible premises which can be subjected to careful scrutiny, and to trust rather to the multitude and variety of its arguments than to the conclusiveness of any one. Its reasoning should not form a chain which is no stronger than its weakest link, but a cable whose fibers may be ever so slender, provided they are sufficiently numerous and intimately connected. (EP 1.29)

---

[89] See, for example, Paul D. Murray, "Truth and Reason in Science and Theology: Points of Tension, Correlation and Compatibility," in *God, Humanity and the Cosmos: A Companion to the Science and Religion Debate*, ed. Christopher Southgate (London: T&T Clark, 2005).

[90] Ibid., 94.

[91] Ibid., 97.

[92] Thomas S. Kuhn, *The Structure of Scientific Revolutions*, 2nd ed. (Chicago: University of Chicago Press, 1970).

[93] Murray, "Truth and Reason," 99–100.

[94] Imre Lakatos, "Falsification and the Methodology of Scientific Research Programmes," in *Criticism and the Growth of Knowledge: Proceedings of the International Colloquium in the Philosophy of Science, London, 1965, Volume 4*, ed. I. Lakatos and A. Musgrave (Cambridge: Cambridge University Press, 1970).

A further notable aspect of Peirce's pragmaticism is that it grants an important place to aesthetics in the process of reasoning. This feature of Peirce's thought can, as usual, be understood in the light of his categories. According to Peirce the 'normative sciences' (the second subdivision of 'philosophy' in his architecture of theories: see §1.2.2) are divided into aesthetics, ethics, and logic. Aesthetics is concerned with what is good in itself (and therefore corresponds to the category of Firstness). Ethics is concerned with the control of conduct so as to conform to an ideal (and thus corresponds to the category of Secondness). Logic is concerned with right ways of reasoning (corresponding to the category of Thirdness). Peirce does not regard it as a weakness that his view of reasoning rests on "sentiments" as much as it does on "logic" (EP 1.150). The idea that knowledge is intimately connected with feeling is related to the role that Peirce proposed for hypotheses (abductions) in scientific thinking. The appearance of a novel hypothesis is a manifestation of Firstness, and the peculiar attractiveness of certain hypotheses is partly a matter of aesthetics. Whereas Popper tended to regard the mechanism by which scientific hypotheses are generated as irrelevant to the subsequent process of their testing and refutation, Peirce understood the generation of hypotheses to be an active and integral part of the process of reasoning.[95] Indeed, according to Peirce the ultimate abduction is the hypothesis of God, and the attractiveness of this hypothesis constitutes, in the words of the title of the 1908 paper mentioned earlier, "A Neglected Argument for the Reality of God" (EP 2.434–450).[96]

*   *   *

In this chapter I have introduced three major areas of Peirce's philosophy, namely, his logical and phenomenological scheme of categories (§1.2), his semiotics (§1.3), and his theory of inquiry (§1.4). I have emphasized how these three areas of thought are closely related to one another, particularly the way in which the structures of semiosis and the processes of inquiry may be described in terms of, and understood as manifestations of, the categories of Firstness, Secondness, and

---

[95] Nicholas Rescher, *Peirce's Philosophy of Science: Critical Studies in His Theory of Induction and Scientific Method* (Notre Dame: University of Notre Dame Press, 1978), 51–63.
[96] See §1.4.1. I discuss this article in Chapter 6, §6.3.

Thirdness. It is convenient, I suggest, to label the broad framework of Peirce's philosophy that is constituted by these three related areas of his thinking as a 'metaphysical semiotics'. In the following chapter I take Peirce's metaphysical semiotics and employ it as the basis of a way of articulating and clarifying Christian thinking about God as Trinity.

A SEMIOTIC MODEL OF THE TRINITY

> In many respects this trinity agrees with the Christian trinity; indeed I am not aware that there are any points of disagreement.... I will not, however, carry this speculation any further, as it may be offensive to the prejudices of some who are present.
>
> C. S. Peirce, 1866[1]

In the quotation above, from one of his 1866 Lowell Lectures, Peirce alludes to parallels between his triadic logic, including his nascent semiotics, and the Christian doctrine of the Trinity. His professed desire not to offend anyone present was presumably somewhat barbed: he was a master of giving offence, indeed, it was the root of his personal downfall. Neither should one attach too much importance to the specific correlations between his semiotics and the Trinity suggested in that lecture: in the 1860s his categories were not yet fully worked out and his semiotics was at a very early stage of development (see §1.2.1 and §1.3.1). In fact, as I shall discuss in the final section of this chapter (§2.5) Peirce seems subsequently to have made rather little reference to possible Trinitarian resonances in his philosophy.

In this chapter I shall explore the respects in which Peirce's triadic philosophy "agrees with the Christian trinity", and I shall endeavour to "carry this speculation" quite a distance. I refer to the result as a 'semiotic model of the Trinity'.[2] Three qualifications are immediately necessary. First, the model would more accurately be called 'a model

---

[1] C. S. Peirce, *The Charles S. Peirce Papers* (Cambridge: Harvard University Press, Photographic Service, 1966), MS 359, quoted in Donna M. Orange, *Peirce's Conception of God: A Developmental Study* (Lubbock: Institute for Studies in Pragmaticism, 1984), 21–22. Manuscript number in accordance with R. S. Robin, *Annotated Catalogue of the Papers of Charles S. Peirce* (Amherst: University of Massachusetts Press, 1967).

[2] My proposal for a semiotic model of the Trinity was originally developed in A. J. Robinson, "A Semiotic Model of the Trinity: God, Evolution and the Philosophy of Charles Sanders Peirce" (Ph.D. diss., University of Exeter, 2003) and summarized in Andrew J. Robinson, "Continuity, Naturalism and Contingency: A Theology of Evolution Drawing on the Semiotics of C. S. Peirce and Trinitarian Thought," *Zygon: Journal of Religion and Science* 39, no. 1 (2004).

of the Trinity based on Peirce's three categories and triadic semiotics'. However, the term 'semiotic model' is more manageable and, I think, adequate for the purpose. Throughout the book my short-hand label should therefore be taken to refer to the idea that Peirce's whole philosophical system may contribute to an understanding of Trinitarian theology. Second, the word 'model' immediately raises questions about the epistemological basis of the exercise. For the moment I shall leave that question deliberately unanswered; I shall return to discuss it some depth in Chapter 6. Third, since Trinitarian theology necessarily extends far beyond the issue of the 'intra'-Trinitarian relations of the Father, Son and Holy Spirit (the 'immanent' Trinity), there is a question as to which elements of my theological programme the term 'semiotic model' is intended to include. Rather than introduce elaborate distinctions of terminology, I shall sometimes use the term, quite narrowly, to refer to my approach to questions concerning the immanent Trinity, sometimes more broadly to include the application of semiotic concepts to the works of the Trinity *ad extra*, and sometimes even more broadly to label the project as a whole. The context of its use will, I think, make its meaning clear.

The structure of this chapter is as follows. In §2.1 I draw attention to parallels between Peirce's category of Secondness and the person of God the Son, the Word, the Second Person of the Trinity. In §2.2 I explore resonances between Peirce's category of Firstness and the ingenerate, unoriginate, unbegotten character of God the Father, the First Person of the Trinity. In §2.3 I use Peirce's category of Thirdness as a way of speaking about the Holy Spirit, the Third Person of the Trinity. In §2.4 I draw these themes together to develop the 'semiotic model of the Trinity' proper. I suggest that the semiotic model of the Trinity clarifies some of the perennial difficulties in conceptualizing the Trinitarian persons and relations, and I propose that the dynamic mutual dependence of Peirce's categories is a helpful analogy for the 'perichoresis' of the Trinitarian persons. Finally, in §2.5, I make some remarks about Peirce's allusions to Trinitarian theology and the connections that Peirce scholars have made, but not fully developed, concerning the possible Trinitarian resonances of Peirce's philosophy.

2.1   The Son/Word and Secondness

2.1.1   In the Beginning Was the Word

> In the beginning was the Word, and the Word was with God, and the Word was God. He was in the beginning with God. All things came into being through him, and without him not one thing came into being.... And the Word became flesh and lived among us, and we have seen his glory, the glory as of a father's only son, full of grace and truth.... No one has ever seen God. It is God the only Son, who is close to the Father's heart, who has made him known. (John 1:1–3, 14, 18)

The prologue of the Fourth Gospel provides the obvious starting point for approaching Christian thinking about God from a semiotic perspective. In the verses quoted above, which contain the New Testament's first and only explicit statement of the concept of incarnation,[3] Jesus Christ is described using the inherently semiotic title of the *Word*. The passage, which probably drew on existing poetic material from within the Johannine circle,[4] is sufficient to offer a highly suggestive parallel between the Logos/Son and Peirce's category of Secondness. The fact that the Word is *with* God implies that the Word is in some sense *distinct* from God (the Father). Thus the Word is a manifestation of *otherness*, the cardinal feature of Peircean Secondness. This otherness, however, allows the Word to *stand for*, or *represent*, something else. John's prologue makes it clear that what the Son/Logos represents is the otherwise unknowable Father, a theme that is repeated throughout the Fourth Gospel. The uttered Word is in some sense both one with, and yet distinct from, its speaker, an idea that was to prove rich with Trinitarian possibilities.[5]

It is important immediately to acknowledge that the meaning of Logos in Greek ranged from, on the one hand, the act of speaking to, on the other, that which was taken to be the underlying basis of speech, namely thought, reason, and meaning.[6] Thus in Greek usage

---

[3] James D. G. Dunn, *Christology in the Making: A New Testament Inquiry into the Origins of the Doctrine of the Incarnation*, 2nd ed. (London: SCM Press, 1989), 241.

[4] Ibid., 239.

[5] Gerald O'Collins, *The Tripersonal God: Understanding and Interpreting the Trinity* (London: Geoffrey Chapman, 1999), 79.

[6] See, for example, Johannes P. Louw and Eugene A. Nida, eds., *Greek-English Lexicon of the New Testament Based on Semantic Domains*, 2nd ed., 2 vols. (New York: United Bible Societies, 1988), 33.99, 89.18.

logos could refer to either 'speech' or 'thought'.[7] The concept of the Logos was particularly important to Stoic metaphysics and cosmology. Stoicism was essentially pantheistic and materialist, but within material reality the Stoics distinguished between passive unformed matter, and the dynamic reason or plan (*logos*) which forms and organizes it.[8] The supreme universal Logos was held to be disseminated within reality in the form of 'seminal logoi' (*logoi spermatikoi*). The human soul was understood as the manifestation of the Logos within us, the presence of the Logos accounting for our ability to comprehend reality.[9] In the operation of the human mind the Stoics further distinguished between the occurrence of an internal rational thought (the 'immanent logos', *logos endiathetos*) and the outward expression of this thought in the form of a word (the 'expressed logos', *logos prophorikos*).

The Stoic concept of the Logos was one of the Hellenistic lines of thought incorporated into Alexandrian Judaism, this Greek influence on Jewish thought being most clearly exemplified by Philo (c.30 BCE– c.45 CE), who used the concept of the Logos to explain how the transcendence of God could be reconciled with God's interaction with the world. According to Philo, the Logos is both the agent of creation and the means by which the human mind apprehends God.[10] Philo identified the *logos* with Platonic Forms in the mind of God. By synthesising this Platonic framework with the Stoic distinction (noted above) between a rational thought (the *logos endiathetos*) and its outward utterance in the form of a word (the *logos prophorikos*) he was able to suggest how the Platonic Forms might be projected outwards in the making of the universe.[11] Whether the prologue to John's Gospel was directly influenced by Philo's synthesis of Jewish and Greek ideas about the Logos is not known.[12] At the very least, Philo's writings

---

[7] G. L. Prestige, *God in Patristic Thought* (1936; Second Edition, London: SPCK, 1952), 123. I shall return to consider the significance of this range of connotation for my semiotic model of the Trinity below (§2.1.2).

[8] J. N. D. Kelly, *Early Christian Doctrines*, 5th ed. (London: A & C Black, 1977), 17–18.

[9] Ibid., 10, 18.

[10] Although Philo is sometimes said to have regarded the Logos as an *intermediary* between God and creation, Dunn argues that Philo in fact portrayed the Logos as the *manifestation* of God, the nearest that man can come to knowing God (*Christology in the Making*, 226–228).

[11] Kelly, *Early Christian Doctrines*, 9–11.

[12] Dunn, *Christology in the Making*, 216. Recent studies undertaken by the Copenhagen School of New Testament scholarship have suggested a strong and direct influ-

show the kind of synthesis of Hebrew and Hellenistic ideas that may have been available to the writer of the prologue and to the readers of that text.[13]

Whatever conclusions should be drawn about the contribution of Greek thought to John's Logos Christology it is certain is that during the second century the Logos concept became central to the task of attempting to understand the relationship between God the Father and the human person Jesus of Nazareth. The Logos-theology of the early Apologists emerged as a response to Christian Monarchianism (from *monos*, 'alone'; *archē*, 'principle').[14] Adolf von Harnack, the nineteenth century historian of dogma, distinguished two varieties of Monarchianism.[15] Modalist Monarchians, also known as Sabellians, sought to defend the unity of God by denying any distinction between God the Father and God the Son, either in eternity or after the creation of the world. (A consequence of such a view is Patripassianism, the idea that the Father suffered on the cross.) Dynamic Monarchians, on the other hand, sought to protect the oneness of God by denying the eternal divinity of the Son. Dynamic Monarchians regarded Jesus as a mere man whom God had adopted and empowered, though they were divided on the question of whether such an adoptionist position implied that the man who became the Christ had also become God. In this context, the originality of the early Apologists who chose to draw on the Logos concept lay in the way in which they used it to begin to

---

ence of Stoic thought on the Johannine material and on Paul. See Gitte Buch-Hansen, "It Is the Spirit That Makes Alive: A Stoic Understanding of Pneûma in John" (University of Copenhagen, 2007); Troels Engberg-Pedersen, *Paul and the Stoics* (Louisville: Westminster John Knox, 2000).

[13] In very general terms it seems reasonable to suggest that the contribution of the Stoic understanding of the Logos was to emphasize the immanence of the Logos in structuring the world, whereas the Platonic element added to this the notion of the transcendence of the creative source of the Logos. Niels Henrik Gregersen has developed this 'Stoicizing Logos Christology' in a way that he argues is congenial to accommodating current scientific concepts of matter, energy and information. Gregersen plays down the usual translation of *Logos* as 'Word', though he acknowledges that the Johannine concept of Logos is 'semantically flexible', having Jewish, Stoic and Platonic backgrounds. Niels Henrik Gregersen, "God, Matter, and Information: Towards a Stoicizing Logos Christology," in *Information and the Nature of Reality: From Physics to Metaphysics*, ed. Niels Henrik Gregersen and Paul Davies (Cambridge: Cambridge University Press, 2010).

[14] Tarmo Toom, *Classical Trinitarian Theology* (New York: T&T Clark, 2007), 61.

[15] Ibid., 54–57. It is important to note that the writings of the Monarchians are known mostly through their opponents; Monarchianism was probably not the coherent movement that later reconstructions may suggest.

formulate the idea of an eternal plurality in God in a way that never-theless affirmed God's oneness. As J. N. D. Kelly puts it:

> Thus the image with which the Apologists worked, viz. that of a man putting forth his thought and his spirit in external activity, enabled them to recognize, however dimly, the plurality in the Godhead, and also show how the Word and the Spirit, while really manifested in the world of space and time, could also abide within the being of the Father, Their essential unity with Him unbroken.[16]

Justin Martyr (c.100–165) emphasized the unknowable transcendence of God, and found in the Stoic concept of the *logos spermatikos* (seeds of the word) a means of expressing how, in spite of this divine trans-cendence, the Son could be both the mediator of creation and the ground of human knowledge of God.[17] Justin conceived of the Logos as the rational thought of God, though scholars appear to be divi-ded on whether Justin held the Logos to be eternally distinct from the Father.[18] However Justin's approach to the begetting of the Son is understood, it is notable that Justin specifically uses a semiotic analogy to illustrate how, in the course of this generation, the Son is not sepa-rated from the Father:

> When we utter a word, it can be said that we beget the word, but not by cutting it off, in the sense that our power of uttering words would thereby be diminished.[19]

---

[16] Kelly, *Early Christian Doctrines*, 104.

[17] O'Collins, *Tripersonal God*, 92.

[18] Kelly suggests that Justin did not regard the Logos as eternally distinct from the Father. According to Kelly, in contrast to creatures, Justin regarded the Logos as having been begotten as a "unique Son", though in Justin's understanding of the gen-eration of the Logos he is concerned only with the putting forth of the Logos as the mediator of creation, and not with the question of the nature of any eternal relation between Father and Son (Kelly, *Early Christian Doctrines*, 96–97). On the other hand Toom takes Justin to be arguing for the eternal pre-existence and distinction of the Son from the Father (Toom, *Classical Trinitarian Theology*, 61).

[19] Justin, *Dialogue with Trypho*, Chapter 61, *Writings of Saint Justin Martyr*, in The Fathers of the Church: A New Translation, Vol. 6, ed. Hermigild Dressler et. al. (Washington DC: The Catholic University of America Press, 1948), 244. Another analogy used by Justin was that of rays shining forth from the sun, or a fire starting another fire (O'Collins, *Tripersonal God*, 89), images which perhaps have more in common with the later notion of the consubstantiality (*homoousion*) of the Father and Son than did his Logos Christology. Indeed, perhaps it was because of the ease with which a Logos Christology can be read in a subordinationist manner that it was Justin's metaphor of Light from Light, rather than that of the uttered Word, that was eventually be incorporated (via the writings of Tertullian) in the Nicene Creed.

Justin's disciple Tatian develops the same idea:

> …so the Word issues forth from the Father's power without depriving
> His begetter of His Word. For example, I talk and you listen to me; but
> I, who converse with you, am not, by the conveyance of my word to you,
> made empty of my word.[20]

Another second century Apologist, Theophilus of Antioch, adopted
the Stoic distinction between the *logos endiathetos* and *logos propho-
rikos* to refer to the way in which, like a word in the mind, the Logos
was in God yet distinct from the Father.[21] Since God must be eternally
wise and rational (he must always have his Logos), the expression of
the Logos would not empty the divine Mind. In spite of the potential
fruitfulness of this line of thought it also shows the ways in which
Logos theologies could begin to run into trouble. The analogy of the
Word as both thought and the expression of that thought could be
interpreted in a modalistic way, denying the distinct subsistence of
the Word. On the other hand, it might also suggest that the Word is
inferior to the Mind from which it originates. These potential modalist
and subordinationist implications of the *logos endiathetos/prophorikos*
analogy ultimately led Irenaeus, Ambrose and Athanasius to reject it,
and it was explicitly condemned at the Council of Sirmium (351).[22]

A 'second generation' of Logos theologians are represented by
Origen, Tertullian and Novatian, all of whom continued to oppose
Monarchianism in its various forms.[23] Of these I shall defer discus-
sion of Origen's theology until we turn to consider the person of the
Father. Tertullian (c.160–225) described the Father and Son as dis-
tinct (*distinctio*) but not separated (*separatio*),[24] and, like the Apolo-
gists discussed above, illustrated this with reference to the notion of
the Word:

> For God brought forth the Word…as a root brings forth the ground
> shoot, and a spring the river, and the sun its beam…. Yet the shoot is
> not shut off from the root nor the river from the spring nor the beam

---

[20] Tatian, *Oratio ad Graecos*, 5.1, quoted in Kelly, *Early Christian Doctrines*, 98.
[21] Kelly, *Early Christian Doctrines*, 95–96, 99. Theophilus seems to have been the
first writer to use the term *trias* (triad) in relation to the threeness of God, though
unlike the later Latin term *trinitas*, *trias* has no simultaneous connotation of unitas
(unity) (Toom, *Classical Trinitarian Theology*, 62).
[22] Toom, *Classical Trinitarian Theology*, 63.
[23] Ibid., 64.
[24] Kelly, *Early Christian Doctrines*, 113.

from the sun, any more than the Word is shut off from God. Therefore according to the precedent of these examples I profess that I say that God and his Word, the Father and his Son, are two.... Everything that proceeds from something must of necessity be another beside that from which it proceeds, but it is not for that reason separated from it.[25]

Tertullian is also notable for having introduced the term 'Trinity' (*Trinitas*) and for being the first to express the plurality-in-unity of the Trinity using the terms person and substance.[26]

We may say, then, that the emerging Logos Christologies of the second century Apologists form the bridge between the Logos terminology of John's prologue and the dawning of the classical language of Trinitarian theology. In terms of a semiotic model of the Trinity, Logos Christologies have a parallel in Peirce's category of Secondness. Secondness is the category of *otherness*, including the distinction between a word (sign) and its object. In Chapter 5 (§5.2.3) I shall suggest that this parallel between Peircean Secondness and the otherness of the Word from the Father reflects the ontological grounding of all instances of Secondness in the world in the eternal intra-Trinitarian distinction between the Father and the Son.

2.1.2   *Logos as Secondness: Points of Disagreement?*

In the epigraph to this chapter I quoted a remark of Peirce's to the effect that he was not aware of any "points of disagreement" between his own triadic semiotics and the Christian doctrine of the Trinity. The semiotic model of the Trinity that I propose here differs from Peirce's own sketchy ideas about possible parallels between his semiotics and Trinitarian thought (to which I shall return below, §2.5). Moreover, the reader may already be aware of some apparent dis-analogies between Peirce's scheme and Christian thinking about the Trinity. In this section I attend to one of these potential points of disagreement.

The issue I have in mind arises from the semantic range covered by the Greek term *Logos*. We have already seen that this term could convey meanings ranging from uttered speech to rational thought. This appears to complicate my suggestion that the Word/Logos that was with God in the beginning is an eternal manifestation of – indeed, the

---

[25] Tertullian, *Adv. Praxean* 8: Ernest Evans, *Tertullian's Treatise against Praxeus* (London: SPCK, 1948), 139–40.
[26] O'Collins, *Tripersonal God*, 104–05.

archetype and origin of – the category of Secondness. If Logos is taken to refer to rationality rather than utterance then it appears to correspond more closely with Peirce's category of Thirdness (the ground of meaning and intelligibility) than with Secondness (the category of otherness and distinction; cf. §§1.2.1–1.2.2).

A parallel problem becomes evident if we trace the roots of John's Logos concept back to the Hebrew scriptures. There, the concepts of the Word (*dabhar*), Spirit/breath (*ruach*) and Wisdom (*hokmah*) all function as personifications of God's creative and redemptive activity.[27] The relation between these personifications would fit tidily with my semiotic model if it were the case that, in early Christian thought, the Hebrew notions of Spirit and Wisdom had been assimilated to one another (since, as I shall argue in §2.3.1, these both have resonances with Peircean Thirdness) and if the Johannine Logos had been identified with the Hebrew *dabhar* (so that the primary connotation of both *dabhar* and Logos could be taken to be that of utterance rather than reason, and hence correlate with Peircean Secondness). Of course, matters are not so straightforward. In Hebrew thought the personification of Wisdom, but not that of Word (*dabhar*), came to be portrayed as distinctively personal, for example by entering into dialogue with God (Sir. 24:1–8).[28] Furthermore, only Wisdom is credited with specific deeds normally attributed to YHWH, such as the exodus from captivity in Egypt (Wisd. 10:15–18). When the New Testament writers came to draw on the Old Testament resources to express the status of Christ it is not surprising, therefore, that they found the person-like qualities of Wisdom to be an appropriate resource for the development of their Christology.[29] Thus, for example, Paul explicitly identifies Christ with Wisdom (1 Cor. 1:24, 30), and in the New Testament passages that most clearly demonstrate the developing concept of the pre-existence of Christ, such as Col. 1:15–20 and 1 Cor. 8:6, definite parallels can be seen with the tradition which regarded Wisdom as having been alongside God and active with God in creation (Job 28:23–28; Prov. 3:19, 8:22–31; Sir. 24:1–9; Wisd. 8:4–6).[30]

---

[27] Ibid., 33.

[28] Ibid.

[29] Dunn, *Christology in the Making*, 209. Whether Dunn is correct in arguing that the actual pre-existence of the Son is not implied in any New Testament writings prior to John's Gospel is not crucial to the argument being developed here.

[30] Ibid., 164–66. Of course, in Hebrew thought the Word was also held to have an important role in creation (Gen. Chapter 1; Ps. 148:3–5).

When the writer of the prologue to John's Gospel composed his or her Christological poem in the language of the Word the choice of terminology appears to have been both in continuity with, and a deliberate departure from, the earlier New Testament adoption of the Wisdom tradition. On the one hand, there is a close correlation between lines of the Logos poem and specific passages from the Wisdom literature (John 1:1, cf. Wisd. 9:9; John 1:11, cf. 1 Enoch 42:2; John 1:14, cf. Sir. 24:8).[31] On the other hand the Johannine choice of 'Word' (Logos) as a way of expressing the pre-existence of Christ seems to reflect a development from the earlier New Testament identification, particularly by Paul and the synoptic Gospels, of the 'word' as the *message of the Gospel*, of which Christ is the content.[32] In the end we do not know why the writer of the Logos poem chose to base its incarnational theology on the Word instead of Wisdom. Possibly the notion of Wisdom was beginning to appear tainted by having become connected with an excess of mythological speculation.[33] Perhaps it appeared inappropriate to associate the female personification of Wisdom with the male person of Jesus, or conceivably, since Wisdom was already identified with the Torah (Sir. 24:23; Bar. 4:1–4), there was a reluctance to identify the incarnate Son with the Law.[34]

To summarize, the considerations just outlined pose two related problems for my suggestion of a parallel between the Johannine Logos and Peirce's category of Secondness (§2.1.1). First, the Greek concept of the Logos has a semantic range that covers 'reason' (hence Thirdness) as well as utterance (Secondness). Second, the emerging Christologies of the New Testament tend to identify Christ as much with the Hebrew personification of Wisdom (hence Thirdness) as with the Word (Secondness). My response to these apparent "points of disagreement" rests on careful attention to the relation between Peirce's semiotic triad and his categories. Specifically, a sign-vehicle, while manifesting Secondness insofar as it stands over against an object, does 'contain' the possibility of meaning and understanding in the sense of being potentially interpretable by a creature with the appropriate capabilities. Moreover, in the semiotic triad of sign-object-interpretant, the

---

[31] Ibid., 164–65.

[32] Ibid., 230–39.

[33] Hans Schwarz, *Christology* (Grand Rapids: William B. Eerdmans, 1998), 233–34.

[34] O'Collins, *Tripersonal God*, 78–79.

category of Thirdness need not be identified solely with the interpretant (see §1.3.2). Rather, the interpretant (in itself) is a manifestation of Secondness in that (minimally) it is a change of state occurring in response to a sign.[35] The Thirdness that is thereby introduced is a function of the sign-vehicle coming to *mediate* between the organism that has made the interpretative response and the object that is of some relevance to that organism. In that sense the sign-vehicle manifests Secondness in standing over against the object that it represents, but Thirdness in the way in which, when interpreted, it mediates between the object and interpreting entity.

Putting this in terms of the apparent problems identified above, to acknowledge that the semantic range of the Johannine Logos encompasses meaning and reason (Thirdness) does not undermine my emphasis on the parallels between the Logos (as Word) and Secondness. We need simply to add that the Word has meaning and gives rise to understanding only by virtue of the Spirit's cooperation in providing the ground (the Thirdness) that allows the Word to mediate between object and interpreter.[36] Hence there is also no contradiction between my semiotic model of the Trinity and the New Testament idea of Christ as the mediator between God and the world (1 Tim. 2:5; Heb. 8:6): the Son/Word is the *mediator*, but only by virtue of the Spirit providing the ground of *mediation*. The same kind of argument may likewise be applied to the dual association of the Hebrew Word and Wisdom with the Johannine Logos. The Word (Secondness) may convey Wisdom (Thirdness), but only by virtue (so the semiotic reading would go) of the work of the Spirit in allowing the Word to mediate between human recipients (interpreters) of the Word and God.

It is worth noting, further, that these apparent overlaps between Secondness and Thirdness that arise when the Peircean categories are applied to the scriptural and philosophical concepts of Word/Wisdom and Logos/Reason can be understood within the semiotic model in the context of the *dynamic* character of Peirce's scheme. I emphasize this point because I am well aware that, in the course of the argument I am developing (in this chapter and in the book as a whole), the exercise of 'dissecting' out the roles of the categories can give the false

---

[35] I shall discuss Peirce's classification of interpretants in §3.4.2 and examine the basis of interpretation in more detail in §4.2.1.

[36] I discuss the parallels between Peircean Thirdness and the Spirit below, §2.3.

impression that I am working with a rather rigid or static set of conceptual resources. My intention is quite the opposite, and I ask the reader to bear in mind that if the dynamic character of the processes we shall be investigating is lost in the act of the analysis that I am undertaking, then this is an artefact of the mode of analysis rather than a reflection of the nature of the underlying vision.

I suggest, then, that parallels may be identified between early Christian thinking about Christ as the Word of God, who is other than the Father and yet represents him, and Peirce's category of Secondness, the category that characterizes all instances of otherness, including the otherness of a sign from its object. I have also touched on the parallel that may be drawn between the Spirit as the ground of mediation (including mediation between the Father and the Son) and Peirce's category of Thirdness, a parallel that I shall explore further in §2.3. Before that I turn to consider the parallels between Christian thinking about God the Father and the Peircean category of Firstness.

2.2   *The Father and Firstness*

2.2.1   *The Transcendence of the Father and the* Homoousion *of the Son*

In §2.1.1 I followed the emergence of proto-Trinitarian thought in the Logos Christologies of the second century Christian Apologists. In the third century a significant development now took place in the Alexandrian school of Christological thought in the form of the incorporation of concepts drawn from contemporary middle-Platonism.[37] From the point of view of the semiotic model of the Trinity the relevance of this move, initiated by Clement (c.150–215) and by Origen (c.185–254), the latter a contemporary of Plotinus, the founder of neo-Platonism, is the parallel between the resulting characterization of the person of the Father and Peirce's category of Firstness.

Origen's system stems from his view of the Father as ingenerate (*agennētos*), the transcendent source of all being.[38] Origen held that "Nothing is ungenerate, that is with underived existence, except only

---

[37] Kelly, *Early Christian Doctrines*, 126–27.
[38] Ibid., 128.

God the Father".[39] In the following sections I shall suggest that this idea of ingenerateness corresponds to Peirce's category of Firstness, in that both refer to that aspect of being whose quality is characterized by being abstractable from relation to anything else (cf. §1.2.1). Earlier Apologists had used similar terminology: Athenagoras describes God as "unoriginate", and Theophilus speaks of God as "Father because He is prior to all things".[40] In general, though, when these early Apologists spoke of the Father they tended to mean the Godhead in general,[41] so that any correspondences with Peircean Firstness in their thought cannot always be taken to refer specifically to the Father, the First Person of the Trinity.

For most of the early Apologists, the Logos was regarded as coming into being at the same time as, and for the purpose of enabling, God's act of creation. There was therefore an inherent subordinationism in their Christology.[42] In contrast, Origen asserted that the Logos was related to the Father by an *eternal generation*, so that the three *hypostases*,[43] Father, Son and Holy Spirit, were to be regarded as eternally distinct, not just manifested in the economy of creation and salvation.[44] Were that not the case the distinctions between Father, Son, and Spirit apparent in the economy would not be genuine revelations of God's true self.[45] Origen's Christology has often been regarded as blatantly subordinationist.[46] However, the way in which Origin understands the Son as causally or logically (rather than temporally or ontologically) second to the Father is subordinationist only in a very special sense – a sense, indeed, that may be regarded in retrospect as falling well within the bounds of later orthodoxy.[47] When Origin balances his emphasis on the distinctness of the *hypostases* with the concept of the

---

[39] Origen, *De Principiis* 1.2.6., quoted in O'Collins, *Tripersonal God*, 109–10.

[40] Kelly, *Early Christian Doctrines*, 84–85.

[41] Ibid., 100.

[42] O'Collins, *Tripersonal God*, 94.

[43] Origen used the term hypostasis in the sense of a distinct 'reality of subsistence', without the later fourth century connotation of 'person' or 'personal relation' (Toom, *Classical Trinitarian Theology*, 66).

[44] To balance the pluralist tendencies in his theology, Origen attempts to protect the unity of God by regarding the Father as "the fountain-head of deity"; an approach to the source of divine unity which became characteristic of Greek theological thought.

[45] Toom, *Classical Trinitarian Theology*, 65.

[46] See, for example, Kelly, *Early Christian Doctrines*, 131–32.

[47] Toom, *Classical Trinitarian Theology*, 69–70; cf. Lewis Ayres, *Nicaea and Its Legacy: An Approach to Fourth-Century Trinitarian Theology* (Oxford: Oxford University Press, 2004), 21–32.

monarchy of the Father as being the 'root' (*rhiza*), 'source' (*pēgē*), and principle of causation (*archē*) of all that is, this ordering (*taxis*) need not be read as implying an ontological subordination of the Son with respect to the Father. Indeed, Origen introduced an argument that was later to become important in the fourth century debates, to the effect that Father and Son are 'correlative' terms; the name 'Father' implies the existence of a child, and the Father could not be truly called Father unless this were eternally so.[48] Nevertheless, the repercussions of the subsequent controversy over Arius and Arianism (see below, §2.2.2) were to leave Origen's Trinitarianism (perhaps unjustifiably) suspect.[49]

Origen's innovation, then, was to allow his understanding of the relation between the Logos and the Father to be shaped by ideas drawn from contemporary Platonism. This is therefore an appropriate point at which to note the respects in which Peirce's category of Firstness has recognisably neo-Platonic resonances.[50] Plotinus conceived of "the One", the highest element in the hierarchy of being, as a formless idea (*amorphon eidos*), indivisible and without attributes.[51] Rather like Peirce's method of 'prescinding' to the category of Firstness (cf. §1.2.2–1.2.3), Plotinus deduced the nature of the One by a progressive examination of what must underlie successive facets of existence.[52] As with Firstness, we cannot strictly say anything true about the One, because the act of applying a predicate to a subject would imply a plurality. Furthermore, Plotinus identified the One with the Platonic idea of the Good; this is similar (though perhaps not identical) to Peirce's grounding of aesthetics in the category of Firstness (mentioned in §1.4.3). However, in Plotinus's scheme the other categories of being (Mind, Soul, and Matter) are derived by progressive emanation from the One. In contrast, in Peirce's cosmology the three categories, whilst they follow from one another in a logical sense, are not ordered in an

---

[48] Ayres, *Nicaea and Its Legacy*, 22.

[49] Joseph W. Trigg, *Origen* (London: Routledge, 1998), 23–24.

[50] Richard Smyth identifies Plotinus (c. 205–270), the founder of neo-Platonism, as one of the intellectual ancestors of Peirce, even though Peirce may not have read Plotinus directly. Richard A. Smyth, *Reading Peirce Reading* (Lanham: Rowman & Littlefield, 1997), 57.

[51] Colin E. Gunton, *The Triune Creator: A Historical and Systematic Study* (Edinburgh: Edinburgh University Press, 1998), 34.

[52] Anthony Kenny, *A Brief History of Western Philosophy* (Oxford: Blackwell, 1998), 96–98.

ontological hierarchy (see §1.2.3). A philosophical commitment to the neo-Platonic idea that plurality *derives* from unity,[53] will tend to lead to the suspicion that Origen's adoption of ideas from neo-Platonism leads in a subordinationist direction. I shall argue below (§2.4.2) that the semiotic model offers a way of expressing the characteristics of the person of the Father in terms of ingenerateness (unoriginateness) without carrying such subordinationist implications.

The concept of the "ingenerateness" of the Father, introduced into Christian theology at least in part from the Platonic philosophical tradition, was to prove central to the theological issues at stake in the Arian controversy.[54] Arius's position is summed up by his assertion that there was a time when the Son did not exist. According to Arius this is a corollary of the Son's origin as *begotten* from the Father. As he put it in a letter written around 318:

> And before he was begotten or created or defined or established, he was not. For he was not unbegotten. But we are persecuted because we say, "The Son has a beginning, but God is without beginning."[55]

The Council of Nicaea (325) rejected Arius's position by asserting that the Son is "begotten, not made" and that he is of "one substance"

---

[53] Rowan Williams, *Arius: Heresy and Tradition*, 2nd ed. (London: SCM Press, 2001), 192.

[54] Arius has traditionally been regarded as the "arch-heretic" of Christian history, whose error was due to his pursuit of the logical consequences of certain philosophical premises, leading him ultimately to deny the divinity of the Son (Frances Young, *From Nicaea to Chalcedon: A Guide to the Literature and Its Background*, London: SCM Press, 1983, 64). More recently, this traditional view has been challenged by the recognition that Arius's starting point was scriptural rather than philosophical, and that his theological position was essentially conservative, aimed at protecting the unique transcendence of God (the Father); see Williams, *Arius*, 107–11. Furthermore, recent scholarship has tended to downplay the actual importance of the particular dispute between the Arius and his bishop, Alexander. The origins of the fourth century debates lay in theological tensions that were already building; the controversy over Arius may have been merely "the spark that ignited a fire waiting to happen" (Ayres, *Nicaea and Its Legacy*, 20). The subsequent labelling as 'Arian' of many positions that eventually came to be considered unorthodox both obscures the fact that the limits of orthodoxy were very fluid during the period of these debates and that many of the positions labelled 'Arian' by their opponents in fact bore little resemblance in detail to Arius's own theology (ibid., 13). Nevertheless, the Arian dispute remains a convenient point of departure for thinking about the issues that were explored during this period of theological development.

[55] Quoted in Catherine Mowry LaCugna, *God for Us: The Trinity and Christian Life* (San Francisco: Harper Collins, 1991), 31.

(*homoousion*) with the Father.[56] However, the term *homoousion* intro-
duced notorious difficulties of its own. *Homoousion* was not a word
found in scripture. Furthermore, there was an inherent ambiguity
about its meaning, an ambiguity which arose from the fact that Aris-
totle had used the term *ousia* in two different senses.[57] Thus the Nicene
Fathers could have been taken to mean either that the Father and Son
share the same 'kind of stuff' that is common to several individuals of
a class, or that the Father and Son derive from division of the same
actual substance.[58] The possibility of the latter, modalist, interpretation
of the Nicene formulation was exacerbated by the fact that the ana-
themata appended to the Creed used the terms *ousia* and *hypostasis*
interchangeably.[59] It was only after a period of terminological fluidity
that *hypostasis* came to be understood as an appropriate designation
for what is three within the one divine *ousia*.[60] The terminology of
Nicaea is therefore perhaps best regarded not so much as a defini-
tive turning point in Trinitarian thought but more as a window onto
the "confusion and complexity" of early fourth century Trinitarian
debates.[61] Indeed, as Lewis Ayres argues, at the time of the Council of
Nicaea, and for some considerable time afterwards, there was no gene-
ral consensus that the term *homoousion* had any particular impor-
tance, or that the Nicene Creed should be considered binding on the
Church as a whole.[62]

Of course even if the complexity of the theological debates of the
fourth century is acknowledged one might still hold to the commonly
accepted view that the eventual acceptance by the Council of Constan-

---

[56] Kelly, *Early Christian Doctrines*, 232. I return to consider the fourth century
Trinitarian disputes from an historical perspective in the Epilogue, Chapter 8.

[57] William P. Alston, "Substance and the Trinity," in *The Trinity*, ed. Stephen T.
Davis, Daniel Kendall, and Gerald O'Collins (Oxford: Oxford University Press, 1999),
185.

[58] Kelly, *Early Christian Doctrines*, 233–37.

[59] Thomas F. Torrance, *The Trinitarian Faith: The Evangelical Theology of the
Ancient Catholic Church* (Edinburgh: T&T Clark, 1988), 116.

[60] Joseph T. Lienhard, "The Cappadocian Settlement," in *The Trinity*, ed. Stephen T.
Davis, Daniel Kendall, and Gerald O'Collins (Oxford: Oxford University Press, 1999).
I discuss the terms *ousia* and *hypostasis* further in §2.4.1.

[61] Ayres, *Nicaea and Its Legacy*, 92.

[62] Ibid., 85. Indeed, at that time the idea that one purpose of an Ecumenical Council
might be to produce a universally binding creed had yet to be developed. Ayres doubts
whether, at Nicaea, the term *homoousios* would have been considered the technical
turning point of the creed (93), and argues that the Nicene Creed of 325 reflects a fluid
and pluralistic, rather than unitary and static, theological situation (98–99).

tinople (381) of the term *homoousios* (of the same substance), in pref-
erence to *homoiousios* (of like substance), was the definitive moment
in the establishment of Trinitarian orthodoxy.[63] In contrast, I wish to
partially shift attention away from the *homoousion* and to suggest that
behind the debates about the *homoousion* lies an even more funda-
mental issue. That issue, upon which the interpretation of the *homoou-
sion* ultimately depends, is the question of the meaning of the concept
of *ingenerateness* as applied to God the Father. It is here, I suggest, that
the importance of the parallels between Peirce's category of Firstness
and the First person of the Trinity will become evident.

2.2.2   *Firstness and Ingenerateness*

A crucial distinction that emerged in the course of the fourth century
Trinitarian debates was that of the absolute difference between the
uncreated and the created orders; the drawing of a clear boundary,
in other words, between God and creation. Lewis Ayres has recently
argued that the fourth century debates should not be regarded as focu-
sing primarily on whether Jesus was divine or not divine, but on the
question of the nature of the generation of the Son/Word from the
Father.[64] According to this perspective it would be a mistake to unders-
tand the Arian controversy as simply a dispute about the divinity or
createdness of Jesus: one of the achievements of the ensuing debates
was to enable such a distinction to be made.[65] Looking back at those
debates we may see that part of the function of the term *homoousios*,
as eventually affirmed at the Council of Constantinople (381), was to
mark this boundary between created and uncreated. In retrospect one
may say that, from the point of view of subsequent orthodoxy, the
Arian position held the Son to be on the created side of the divide,
whilst the opponents of Arianism believed Father and Son (and in
some cases Holy Spirit) to be uncreated.[66] Having made this distinc-
tion it is then possible to retrace the fourth century debates and intri-
gues and ask what conceptual shifts contributed to, and underpinned,
the clarification marked by the term *homoousion*.

---

[63] cf. Torrance, *Trinitarian Faith*, 144–45.
[64] Ayres, *Nicaea and Its Legacy*, 5.
[65] Ibid., 4, 14–15.
[66] Toom, *Classical Trinitarian Theology*, 90.

Let us consider how Peirce's categories are able to clarify what was at stake in these debates. Of particular interest for my purposes is the importance that came to be attached to the precise terminology used to describe the transcendent character of the Father.[67] Specifically, at the time of the crisis leading up to the Council of Nicaea (325) no clear distinction was generally made between the terms *genētos* (from *ginomai*, I come into being) and *gennētos* (from *gennao*, I beget). It was agreed by all parties that the Father was *agennētos* (unbegotten). However, at the time there was no difficulty in contrasting this with a description of the Son as *genētos* (single *nu*) rather than *gennētos* (double *nu*), since a clear distinction between these two terms had not yet been made.[68] Supporters of Arius seized upon the term *genētos*, claiming that it implied something that was made or created, unlike the uncreated nature of the Father. According to Arius, to be uncreated was necessarily to be unbegotten, from which it follows that if the Son is begotten then he is necessarily created (and therefore not divine).[69]

A satisfactory response to this Arian claim depended on distinguishing explicitly between *agennētos* (unbegotten) and *agenētos* (uncreated). This would eventually make it possible to say of the Son that he is begotten (*gennētos*) but uncreated (*agenētos*).[70] Athanasius, the recurrently exiled Bishop of Alexandria, appears to have taken the first steps towards this clarification. Although Athanasius initially tended to use the two terms synonymously he began to explore a range of meanings for them. In a passage in his *Orations Against the Arians* he implies that the Son is begotten (*gennētos*) in relation to the unbegotten (*agennētos*) Father, whereas in relation to God, who is *agenētos* (ungenerated, uncreated) all created things are *genētos* (generated).[71] Opinion appears to be divided about whether Athanasius should be credited with definitively establishing the distinction between unbegotten and uncreated.[72] In any case, it was not long before his underlying insight

---

[67] Young, *Nicaea to Chalcedon*, 59.

[68] Prestige, *God in Patristic Thought*, 151.

[69] LaCugna, *God for Us*, 33.

[70] Ibid., 30–33.

[71] Thomas A. Kopecek, *A History of Neo-Arianism*, 2 vols. (Philadelphia: The Philadelphia Patristic Foundation, 1979), Volume I, 88–91; the passage discussed by Kopecek is *Orations Against the Arians* 1.31.

[72] Prestige attributes the resolution of the terminological ambiguity to Athanasius himself; Ayres appears to be more circumspect. G. L. Prestige, "Agen[N]Etos and

was clearly developed by others. At the abortive Council of Serdica in 343 (on which I shall have more to say in Chapter 8) a profession of faith issued by the western group of bishops made a clear distinction between the two terms and condemned those (Arians) who confuse being begotten (*gennētos*) with being created (*genētos*).[73] Similarly the Macrostich (long-lined) Creed of 345 also emphasizes the uniquely ingenerate (*agennētos*) character of the Father.[74] During the 350s the Nicene Creed began to assume greater importance as more explicitly pro-Nicene and anti-Nicene theologies began to emerge. Athanasius now undertook to develop a detailed defence of the terminology of Nicaea, including the term *homoousios.* In doing so he increasingly came to emphasize the complete discontinuity between the created and uncreated orders, one aspect of this being his willingness to apply the word *agenētos* to both the Father and the Son on the basis that *agenētos* (uncreated) does not take its sense "from contrast with the Son, but with the things that come to be through the Son".[75]

The distinction that came to be made between *agenētos* and *agennētos* in the fourth century Trinitarian debates has a parallel, I suggest, in the relation between Peirce's categories of Firstness and Secondness. To say that a phenomenon manifests Peircean Firstness is equivalent to saying that the phenomenon is *agennētos*. In other words, Firstness is the category of *unbegottenness*, the quality of being abstractable from relation to anything else. Firstness is logically prior to the other categories in being their origin or source. However, as I emphasized in §1.2.3, the presence of Firstness itself depends on certain regularities and structures of the world made possible by the categories of Secondness and Thirdness. In other words, the *logical priority* of Firstness is nevertheless consistent with its *ontological dependence* upon the other two categories. Once it arises within these structures of the world, Firstness can, as sheer quality, feeling or being, be 'prescinded' from relation to, dependence on, or determination by, anything else. This pattern of logical order in the context of ontological mutual

---

Cognate Words in Athanasius," *The Journal of Theological Studies* 34 (1933): 264–65, cf. Ayres, *Nicaea and Its Legacy*, 112–13.

[73] Ayres, *Nicaea and Its Legacy*, 125.

[74] Ibid., 144.

[75] Ibid., 139–43. See Athanasius, *De Decritis*, VII.29, *Select Writings and Letters of Athanasius, Bishop of Alexandria*, ed. Archibald Robertson, in *A Select Library of Nicene and Post-Nicene Fathers of the Christian Church*, Volume 4, ed. Philip Schaff and Henry Wace, (Grand Rapids: Wm. B Eerdmans, 1891).

dependence is parallel to (and, I shall argue in Chapter 5, is a consequence or 'vestige' of) the ordered distinctiveness and ontological equality of the Trinitarian persons. The Father is only Father by virtue of having (eternally) a Son. Nevertheless, it remains coherent to say that the Father is the source of origination of the Son; that the Son is generated from and by the Father.

The key distinction that permits this way of speaking about the logical and ontological relation of Father to Son is that between being unbegotten (*agennētos*) or being uncreated (*agenētos*). It follows that to identify Firstness with unbegottenness is not in any way to imply that manifestations of Firstness (in the world) are occurrences of something uncreated (*agenētos*). Firstness (unbegottenness) is characteristic of some aspects of *created* being (such as ontologically indeterministic events) and of the *uncreated* First Person of the Trinity.[76] Likewise, the category of Secondness (begottenness) is a familiar characteristic of another aspect of the *created* world (instances of otherness, resistance, actuality) as well as being the characteristic of the *uncreated* Second Person of the Trinity, the Son who is begotten (not created) from the Father. By pointing to manifestations of Firstness and Secondness in the world the semiotic model is thus able to exemplify (from within the created order) the relation between *gennētos* (begotten) and *agennētos* (unbegotten) as Christian theology has come to apply it to the relation between Father and Son 'within' the uncreated Godhead. In doing so the semiotic model illustrates and clarifies the fact that the distinction between Firstness (*agennētos*, unbegottenness) and Secondness (*gennētos*, begottenness) is not to be confused with the question of whether something is created or uncreated (*genētos* verses *agenētos*).

Importantly, then, a little-recognized corollary of the fourth century distinction between begottenness and createdness – a consequence to which the semiotic model draws attention – is that unbegottenness may be expected to be manifest within and as a part of the created order. That is to say, Firstness, which in the semiotic model is understood to be in some sense analogous to the distinctive character of the unbegotten First Person of the Trinity, may be understood as just as much a part of the created order as are created instances of Secondness (such

---

[76] I discuss the relation between Peircean Firstness and ontological indeterminacy in §5.2.2.

as ordinary instances of otherness in the world). In my experience there is a certain amount of reluctance among theologians to accept this, a reluctance that reflects, I suggest, a kind of inverted Arianism. I mean by this that any such scepticism about the presence of unbegottenness in the created order probably stems from an assumption that unbegottenness is somehow more divine (less created) than begottenness. Yet if that were the case then, conversely, begottenness must be taken to be less divine than unbegottenness, which is precisely Arius's contention. In the light of the semiotic model, then, the distinction between *gennētos* (begotten) and *agennētos* (unbegotten) turns out to have significant consequences not only for the way in which we think about God but also for the way in which we understand the nature of the created order. I shall return to this point in Chapter 7 (§7.2.1).[77]

2.2.3 *Essence and Energies: On Not Knowing God by a Definition*

In the mid-fourth century a group emerged that became known by their opponents as Anomoeans (unlikers) or heteroousians, to whose thought I now turn. The heteroousians, of whom Aetius and Eunomius are key representatives, are sometimes referred to as 'neo-Arians' on the basis that they held to an extreme form of Arianism, though the accuracy of this characterization has been disputed.[78] The heteroousian position rested on identifying the *ousia* (essence) of God as 'unbegottenness'. Furthermore, Eunomius and his co-factionists held (in contrast, incidentally, to Arius's emphasis on the ineffable transcendence of God) that since we know that the essence of God is 'unbegottenness' we need express no apophatic reserve in our talk about the nature of God's being. According to Eunomius, words can give direct access to understanding the essence of God which, by virtue of being defined by being unbegotten, is 'simple'.[79] We do not know to what extent Athanasius's continuing development of the distinction between the terms *agenētos* and *agennētos*, discussed above (§2.2.2), stimulated

---

[77] Referring to the disputes and intrigues that culminated in the Creedal formulation settled upon at the Council of Constantinople in 381, Edward Gibbon famously remarked in his *Decline and Fall of the Roman Empire* that never had so much energy been spent over a single vowel (the first *iota* in *homoiousios*); see Alister E. McGrath, *Historical Theology: An Introduction to the History of Christian Thought* (Oxford: Blackwell, 1998), 51. Perhaps my Peircean analysis suggests that the more fundamental point at stake in the post-Nicene debate was the significance of a single consonant (the second *nu* in *agennētos*).

[78] Toom, *Classical Trinitarian Theology*, 121–22.

[79] LaCugna, *God for Us*, 55–56.

a reaction by those inclined to more subordinationist positions. It seems possible that the emphasis placed by the heteroousians on the essence of God being defined by God's ingenerateness (*agennētos*) owes something to Athanasius' concerns,[80] and it certainly reflects the importance that this terminological issue assumed in the late 340s and early 350s.[81]

The Cappadocian Fathers offered a variety of theological refutations of Eunomius's views. In the first book of *Contra Eunomium* Basil of Caesarea argues that ingenerateness (*agennēsia*) is the essential characteristic of the Father, not of deity in general.[82] Basil's brother, Gregory of Nyssa, took up the debate with Eunomius after Basil's death, arguing that "ingenerate" does not describe the essence of God, but a characteristic of one *hypostasis* (the person of the Father), and, further, that the title "Father" does not signify the divine essence, but only the Father's relation to the Son.[83] Likewise, Basil had held that the Father is not only defined by absence of relation to something antecedent, but also by relation to the Son,[84] just as Athanasius had argued that a denial of the eternal existence of the Son would be a denial of the eternal fatherhood of the Father.[85]

Basil and Gregory also rejected Eunomius's claim that, by virtue of the fact that the definition of the nature of God is given in the term "ingenerate" (*agennētos*), it is possible to have direct knowledge of the essence (*ousia*) of God.[86] Gregory argued that the Eunomians misunderstood the title 'Father' as identifying an essence, when the name indicates only a relation (to the Son). He drew attention to the fact that Jesus commissions the disciples to baptise in the name (singular) of the "Father and of the Son and of the Holy Spirit" (Matt. 28:19), and argued that the essence of God corresponded to the (un-named) name behind the three known names. In other words, human discussion of God is not about God's un-named and unknowable essence but about his named and knowable energies (*energeiai*).[87]

---

[80] Kopecek, *History of Neo-Arianism*, volume 1, 120–22; cf. Ayres, *Nicaea and Its Legacy*, 144.

[81] Ayres, *Nicaea and Its Legacy*, 144.

[82] Young, *Nicaea to Chalcedon*, 109.

[83] LaCugna, *God for Us*, 62.

[84] Ibid., 61.

[85] O'Collins, *Tripersonal God*, 115.

[86] LaCugna, *God for Us*, 56.

[87] Toom, *Classical Trinitarian Theology*, 137.

The anti-Eunomian arguments of the Cappadocians are generally held to have been decisive, but arguably they come at a price. On the positive side, the Cappadocians refuted the idea that the essence of God could be known by virtue of the philosophical definition of God as 'ingenerate'.[88] On the negative side their distinction between the unknowable divine *ousia* and the manifestation of God through God's energies (*energeiai*) is one aspect of what LaCugna has identified as a perennial tendency in Christian theology to disconnect Trinitarian thought from reflection on the economy of salvation.[89] If human experience of the Son and Spirit in the economy of salvation is (merely) a manifestation of the working of God's energies, not an expression of God's *ousia*, then the revelation of God in Jesus Christ is not, after all, the self-communication of God's very being. LaCugna goes as far as to say that this "breach between *oikonomia* and *theologia*" represents a "defeat of the doctrine of the Trinity".[90]

The semiotic model is able to clarify, I suggest, the Cappadocian objections to Eunomianism while avoiding this potential pitfall of Cappadocian theology. First, as argued above (§2.2.2), the semiotic model illustrates and clarifies the distinction between generate vs. ingenerate (or begotten vs. unbegotten) in such a way as to support the idea that this distinction is not the same as the distinction between created vs. uncreated. The semiotic model thus affirms the fourth century insight (championed by the Cappadocians) that ingenerateness is characteristic of the Father specifically, not God in general. Second, the semiotic model helps to refute the idea that ingenerateness implies simplicity (in the Eunomian sense). Peircean Firstness is the category that grounds every possible quality – indeed, it is the ground of possibility itself. Firstness is the source of the unconstrained and spontaneous play of possibilities, the category of all feeling and beauty. There is therefore a richness to the category of Firstness in all its possible manifestations that is surely beyond the capacity of any finite mind to grasp. Of course, once we speak of "multiple" qualities we have introduced the category of Secondness, without which no distinction could be made

---

[88] William C. Placher, *The Triune God: An Essay in Postliberal Theology* (Louisville: Westminster John Knox, 2007), 125–28.

[89] LaCugna, *God for Us*, 72. This "apophatic move" was taken up about a century later in the writings of Pseudo-Dionysius the Areopagite, and by Gregory Palamas in the fourteenth century.

[90] Ibid., 8–9.

between different qualities: as previously emphasized, nothing can be said about Firstness without introducing the category of Secondness (§1.2.2). In the same way, however, to refer to Firstness as unitary, "one", would be to invoke Secondness by placing it in opposition to the concept of plurality. Firstness is not the negation of plurality, it is logically prior to any notion of number (a point to which I shall return below, §2.4.2). The semiotic model thus affirms the identification of the Father as the 'ingenerate' person of the Trinity without implying that at the heart of the being of God there is a 'simplicity' of the kind envisaged by Eunomius.

Third, for this reason the semiotic model rejects the Eunomian claim that the essence of God can be known by philosophical definition. Confessing that the Father is 'ingenerate' or 'unbegotten' does not entail a claim that knowledge of the Father is possible merely by means of reflection on the meaning of these words. The Christian tradition wishes to say, in contrast, that the quality of the Father's being is revealed in the Word incarnate, in the human person Jesus of Nazareth. When the disciple Philip pleads with Jesus, "Lord, show us the Father, and we will be satisfied," Jesus responds, "Whoever has seen me has seen the Father" (John 14:8–9). That the quality of the Father's being is fully revealed in the person and life of a first century Palestinian Jew is not a claim that could be derived from philosophical analysis or speculation.[91]

2.3   *The Spirit and Thirdness*

2.3.1   *The Lord the Giver of Life*

Having begun to develop a 'semiotic' approach to Trinitarian theology in terms of parallels between traditional thinking about the First Person and the Second Person of the Trinity and Peirce's categories of Firstness and Secondness (§§2.1–2.2), let us turn now to consider the Third Person of the Trinity, the Holy Spirit. Generally speaking whereas the Christian tradition has paid a great deal of attention to the metaphysics of the relation between the Father and the Son it has been

---

[91] In Chapter 3 (§§3.1–§3.2) I explore how a Peircean semiotic approach may contribute to understanding the idea that the Word became incarnate in the person of Jesus, and in Chapter 6 (§§6.1–6.2) I discuss the relation between metaphysics and 'revealed' theology.

much less clear about what it wishes to say metaphysically about the Holy Spirit. Indeed, this may be an important contributory factor in the notorious theological neglect of the Spirit.[92] I wish to suggest that by pointing to the parallels between the work of the Spirit and Peirce's category of Thirdness the semiotic model offers a constructive approach to the theological task of articulating a coherent pneumatology.

According to the traditional Christian reading of Gen. 1:2 the Spirit (*ruach*) sweeps over the formless void, with the promise of bringing order (Thirdness) to the primordial chaos (Firstness). Martin Luther, who claimed to be the only person to have understood the first chapter of Genesis,[93] regarded the role of the Son in creation as that of *separating* the unformed "crude mass" which was brought forth out of nothing, whilst the role of the Spirit who brooded over the waters was "to *bring life* to those substances which were to be quickened and adorned".[94] In Chapter 1 (§1.3.1) I mentioned the idea, to be explored in depth in Chapter 4 (§4.2), that a capacity for interpretation may be a fundamental feature of living things, a necessary criterion for distinguishing life from non-living entities. Since Thirdness is the category of, among other things, purposiveness and interpretation, the identification of the Spirit as the source of life (e.g., Ps. 104:29–30; Ezek. 37:1–10) suggests resonances with the category of Thirdness. It is significant that, according to the Hebrew perspective, the life-giving role of the Spirit applies to all life, both human (Gen. 2:7; Job 33:4) and non-human (Ps. 104:25; Gen. 6:17; Gen. 7:15; Job 34:14–15). In the New Testament the emphasis shifts to the role of the Spirit as the source of the *new* creation, the new life heralded by the resurrection (e.g., Rom. 8:11, Gal. 6:8).[95] In the light of such a wealth of biblical testimony it is surely legitimate to identify a distinctive characteristic of the Spirit as that of bringing the life-giving power of God to creatures.[96]

---

[92] As Eugene F. Roberts Jr. puts it: "Is the Spirit superfluous? Academic theology has all but answered yes". Eugene F. Rogers Jr., *The Holy Spirit: Classic and Contemporary Readings* (Chichester: Wiley-Blackwell, 2009), 1.

[93] Gunton, *Triune Creator*, 148.

[94] Martin Luther, *Lectures on Genesis*, ed. Jaroslav Pelikan, vol. 1, Luther's Works (Saint Louis: Concordia, 1958), 9. Italics mine.

[95] For other New Testament references to the connection between life and the Spirit see John 6:63, 7:37–39, Rom. 1:4, 7:6, 2 Cor. 3:6, 1 Pet. 3:18, 1 Tim. 3:16.

[96] Thomas F. Torrance, *The Christian Doctrine of God: One Being Three Persons* (Edinburgh: T&T Clark, 1996), 218. See also Wolfhart Pannenberg, *Systematic Theology, Volume 1*, trans. Geoffrey W. Bromiley (Grand Rapids: Eerdmans, 1991), 315, 73.

In recognizing the Spirit as the source of life, Christian pneumatology thus has clear resonances with Peirce's category of Thirdness.

A further connection between Christian thinking about the Spirit and Peirce's category of Thirdness is the relation of both to the idea of 'love'. Peirce connects love with the category of Thirdness in his notion of 'agapasticism', which I shall discuss in §5.1.2. Likewise, in Trinitarian theology there is a strong tradition of understanding the Spirit in terms of love (cf. Rom. 15:30; Col. 1:8), notably in Augustine's identification of the Spirit as the bond of love between the Father and Son.[97] Aquinas held that the names *verbum* (word) and *imago* (image) were proper to the Son, and the names *amor* (love) and *donum* (gift – on which more below) were proper to the Spirit.[98] In addition, there are parallels in the roles that the Spirit and Thirdness may be understood to play in relation to history. Thus the Spirit may be understood theologically as the source of openness to the future (e.g., 2 Cor. 3:17; Gal. 4:6–7),[99] which coheres with Peirce's notion that Thirdness is the category on which genuine freedom depends.[100] Moreover, like Thirdness, the Spirit may be regarded as the source of knowledge and reason. The Spirit inspires the prophets (e.g., Isa. 61:1; 2 Sam. 23:2) and is the source of insight and understanding (e.g., Isa. 11:2). Of the nine gifts of the Spirit listed by Paul in 1 Cor. 12, six might be regarded as manifestations of Peircean Thirdness: namely, the utterance of wisdom, the utterance of knowledge, prophecy, discernment, various kinds of tongues, and the interpretation of tongues.[101]

In these gifts listed in 1 Cor. 12, the emphasis is on the Spirit's specific gifts to humans, whereas another strand of the scriptural tradi-

---

[97] LaCugna, *God for Us*, 90, Augustine, *The Trinity*, ed. John E. Rotelle, trans. Edmund Hill, *The Works of Saint Augustine: A Translation for the 21st Century* (New York: New City Press, 1991), VII.2.6.

[98] Bernard J. Lonergan, *Verbum: Word and Idea in Thomas Aquinas* (Notre Dame: University of Notre Dame Press, 1967), 209; Thomas Aquinas, *The Summa Theologica of Thomas Aquinas*, 22 vols. (London: Burns, Oates and Washbourne, 1920–1924), Part 1, qq. 34.a.2, 35.a.2, 37.a.1, 38.a.2.

[99] Wolfhart Pannenberg, *Systematic Theology, Volume 2*, trans. Geoffrey W. Bromiley (Grand Rapids: Eerdmans, 1994), 97–98. See also Jürgen Moltmann, *The Trinity and the Kingdom of God: The Doctrine of God*, trans. Margaret Kohl (London: SCM Press, 1981), 89.

[100] The idea of Thirdness as the source of freedom, beyond mere interactions of chance and necessity, will be developed further in Chapter 5, §5.1.3.

[101] The others are faith, gifts of healing, and the working of miracles. For other passages linking the Spirit to understanding or coherent utterance see 1 Thess. 1:5–6; Matt. 10:20 and parallels.

tion understands the Spirit as a creative power that is active through-out the cosmos (e.g., Joel 2:28–29). The question arises whether these two apparently divergent traditions concerning the Spirit – on the one hand the cosmic creative action of the Spirit, on the other the special gift to humans of knowledge and understanding – can be reconciled.[102] The semiotic model offers a resolution to this apparent problem. From a Peircean perspective the source of life, right down to the emergence of the simplest protobiotic entities (§§1.3.1 and 4.2.2) and the basis of human knowledge and understanding (§1.4) are both underpinned by the category of Thirdness. For this reason the semiotic model makes sense of the affirmation in the Niceno-Constantinopolitan Creed that the Holy Spirit is both "the Lord, the giver of life" and "has spoken through the prophets". Furthermore, Peirce's notion of Thirdness as the source of intelligibility, together with his emphasis on the com-munal nature of knowledge (§1.4.3), ties closely with the Spirit's para-digmatic inauguration of the Church, expressed as it is by Luke in terms of otherwise incomprehensible languages becoming intelligible (Acts 2).[103] The semiotic model would thus support attempts, such as that of John Zizioulas, to re-affirm the centrality of the ecclesial role of the Spirit in "constituting" the Church.[104]

The considerations outlined above demonstrate, then, that there are suggestive parallels between the traditional theological attribution of certain roles to God's creative Spirit and the aspects of being that may be regarded philosophically as grounded in those of Peirce's cat-egory of Thirdness. A further question is whether the basis of these parallels can be traced to a clearly identifiable metaphysical connec-tion between the two. In other words, is it theologically justifiable to claim that, like Peircean Thirdness, the various roles and functions attributable to the Spirit are ultimately manifestations of *mediation* (cf. §§1.2.1–1.2.2)? On the whole it must be said that neither scripture or tradition have clearly made such an identification, at least not to the same extent that, as argued above (§2.2.2) the distinguishing fea-ture of the Father is unbegottenness (Firstness) and that of the Son is

---

[102] Celia E. Deane-Drummond, *Creation through Wisdom: Theology and the New Biology* (Edinburgh: T&T Clark, 2000), 116–21.

[103] See also 1 Cor. 12:13, 2 Cor. 13:13, Eph. 4:3, Phil. 2:1.

[104] John D. Zizioulas, "The Doctrine of God the Trinity Today: Suggestions for an Ecumenical Study," in *The Forgotten Trinity, Volume 3: A Selection of Papers Presented to the BCC Study Commission on Trinitarian Doctrine Today* (London: British Council of Churches, 1991), 28.

begottenness/otherness (Secondness). Indeed, as I mentioned above, I believe that the absence of a clear articulation of what one might call a 'metaphysics of the Spirit' is at the root of the difficulty that theological tradition has had in expressing the place of the Spirit in the Trinity, and the consequent tendency for the Spirit to be relatively neglected in theology and worship. Nevertheless, some support can be found for an identification of the Spirit with the phenomenon of mediation. In John's Gospel, Jesus promises that the Father will give the disciples the Spirit as an "advocate" (John 14:16) who will act as what amounts to a mediator between the Father and the Son on the one hand and the world on the other (John 16:13–15). In fact, in pre-Christian and non-Christian Greek literature the word *paraclete*, usually translated as "advocate" or "helper", can also mean "mediator".[105] Paul also uses the language of mediation when he declares that "God's love has been poured into our hearts through the Holy Spirit" (Rom. 5:5), and that the Spirit "intercedes" for the Saints (Rom. 8:26). Augustine suggested that "the Holy Spirit is a kind of inexpressible communion or fellowship of Father and Son".[106] The idea that the primary characteristic of the Spirit is the phenomenon of mediation is summed up by John V. Taylor when he calls the Spirit "the Go-Between God".[107]

A potential objection to making a specific connection between the Spirit and the metaphysical category of mediation is that the Son, the Second Person of the Trinity, is also often understood as a mediator (e.g., Heb. 8:6; 9:15; 12:24). I have already addressed this objection in §2.1.2, where I argued that the Son/Word (rather than the Spirit) is indeed rightly regarded as the *mediator*, but only by virtue of the Spirit providing the *ground of mediation*. Here the semiotic model may be regarded as mildly revisionist in the sense of suggesting an exegetical rule whereby references to the Son/Word as mediator can be understood in terms of the mediating role of the Son that is granted *by the power of the Spirit*. The Word is interpretable because the Spirit enables it to be so. This principle would be in keeping with the New

---

[105] William F. Arndt and F. Wilbur Gringrich, *A Greek-English Lexicon of the New Testament and Other Early Christian Literature: A Translation and Adaptation of Walter Bauer's Griechisch-Deutsches Wörterbuch Zu Den Schriften Des Neuen Testaments Und Der Übrigen Urchristlichen Literatur*, 4th revised and augmented ed. (Chicago: University of Chicago Press, 1952), 623.

[106] Augustine, *The Trinity*, V.12.

[107] John V. Taylor, *The Go between God: The Holy Spirit and Christian Mission* (London: SCM Press, 1972), 22.

Testament witness to the close relation between the Son and Spirit, as seen particularly, for example, throughout the Gospel of Luke.

A related objection to my semiotic model, also discussed in §2.1.2, is that several New Testament passages implicitly (and some explicitly, e.g., 1 Cor. 1:24; Col. 2:3) identify the Hebrew personification of Wisdom with the Son/Word rather than with the Spirit. In the semiotic model, in contrast, it would be more natural to connect Wisdom (by virtue of associations with intelligibility and reason) with Peircean Thirdness, and thus with the Spirit. It is therefore worth noting that parallels between Wisdom and the Spirit may be found in the Wisdom literature. For example, Wisdom is described as "a breath of the power of God" (Wisd. 7:25) who, like the Spirit, inspires the prophets (Wisd. 7:27). Understanding comes through "the spirit of wisdom" (Wisd. 7:7), and knowledge of what is in the heavens is not possible "unless you [God] have given wisdom, and sent your holy spirit from on high" (Wisd. 9:17). Isaiah describes the spirit of the Lord as "the spirit of wisdom and understanding" (Isa. 11:2; cf. Prov. 8:14–15). Similarly, although the New Testament generally associates Wisdom with Christ, there are also parallels with the Spirit. In a substantial passage Paul closely identifies the wisdom that comes from God with the Spirit (1 Cor. 2:1–13). One of the gifts of the Spirit is the utterance of wisdom and knowledge (1 Cor. 12:8). Where, in Luke (21:15) Jesus promises the disciples that they will be given words and wisdom, the parallel passage in Matthew presents Jesus reassuring the disciples that "what you are to say will be given to you at that time; for it is not you who speak, but the Spirit of your Father speaking through you" (Matt. 10:19–20).

In this context it is notable that there was a strand of early Christian thought, notably in the writings of Theophilus of Antioch and Irenaeus of Lyons, which identified the Spirit with Wisdom rather than with the Logos.[108] G.L. Prestige remarks that it is curious that the identification of the Spirit with Wisdom, which these two writers apparently suggested independently at about the same time (the ninth decade of the second century), was not developed further.[109] It is arguable that the loss of this association of the Spirit with Wisdom may have contributed to the subsequent tendency for Christian theology and worship

---

[108] Kelly, *Early Christian Doctrines*, 102, 05–06.
[109] Prestige, *God in Patristic Thought*, 89–92.

to focus on the Son at the expense of the Spirit.[110] Whereas the Eastern Church has maintained a strong sense of the importance of the Spirit through its liturgies, in the West the tendency has been towards a christocentrism, even verging on "christomonism".[111] This tendency may have been exacerbated by the fact that Logos Christologies have in the past found little room for the role of Spirit.[112] A recovery of the identification of Wisdom with the Spirit might therefore help to redress this imbalance, and the semiotic model offers a means by which such a recovery might be facilitated.

In summary, then, there are noteworthy parallels between Peirce's category of Thirdness and Christian thinking about the Third Person of the Trinity, the Holy Spirit. I have highlighted, particularly, their roles (from philosophical and theological perspectives, respectively) as the source of life and of the continuity of living things; as the basis of love; as the ground of the orientation of creation to the future; as the source of meaning, intelligibility and wisdom; and as the metaphysical principle of mediation. I turn, in the following section, to ask whether the semiotic model of the Trinity might shed any light on the perennial theological problem of the 'procession' of the Spirit.

2.3.2   *The Procession of the Spirit*

In the loosely historical trajectory that the argument of this chapter has been following we reached, in §2.2.3, the contribution of the Cappadocian Fathers to theological reflection on the relation between the Father and the Son. As Trinitarian orthodoxy came to take shape in the second half of the fourth century the Cappadocians had, in addition, an important role in advancing Christian thinking about the Spirit. A stimulus to pneumatological reflection had been provided by the 'Tropici', a group who affirmed the divinity of the Son while denying that of the Spirit. In responding to the Tropici, Athanasius had developed a pneumatology along similar lines to his theology of the Word, arguing that, if our salvation depends on a relationship with God that is grounded in the work of the Spirit, then the Spirit must, like the

---

[110] Deane-Drummond, *Creation through Wisdom*, 126.

[111] Gerald O'Collins, "The Holy Trinity: The State of the Questions," in *The Trinity*, ed. Stephen T. Davis, Daniel Kendall, and Gerald O'Collins (Oxford: Oxford University Press, 1999), 13.

[112] Ibid., 18.

Son, be of one substance (*homoousios*) with the Father.[113] Athanasius's view that the Spirit was not a creature was accepted at the Council of Alexandria (362), but the concept of the Spirit's full divinity remained a matter of dispute.[114] One argument put forward by the pneumatomachians (the 'Spirit-fighters') was that no other form of relationship could be conceived of within the Godhead other than that of Father-Son: therefore, the Spirit must either be another unoriginate principle alongside the Father or a generated brother of the Son.[115]

In order to consolidate Athanasius's pneumatology and secure acceptance of the divinity of the Spirit the Cappadocians had to respond to this objection that the *homoousion* of the Spirit implied that the Father had two Sons. To do so, Basil of Caesarea made a distinction between the *generation* of the Son and the *breathing* of the Spirit (cf. John 20:22), while Gregory of Nazianzus employed the term 'procession' for the origin of the Spirit (cf. John 15:26). However, as Kelly points out, "what procession means he [Gregory] can no more explain than can his adversaries what the Father's *agennēsia* or the Son's generation means, but [that] it distinguishes the Spirit from both".[116] Indeed, the vagueness of the term 'procession' may have been partly what recommended it.[117] Gregory of Nyssa is credited with providing the "definitive statement": that the Father is the *cause* of the Son and Spirit, who are themselves both *caused*; and that the Son and Spirit are further distinguished by the Son being produced from the Father *directly*, whilst the Spirit *proceeds* from the Father *through* the Son. From this followed what was to become the standard teaching of the Eastern Church, that the Spirit proceeds *out of* the Father *through* the Son.[118]

Regarding the Spirit's origin, the Niceno-Constantinopolitan Creed followed Gregory of Nazianzus in professing that the Spirit 'proceeds' (*ek-poreuestai*) from the Father. In the West there was already some

---

[113] Young, *Nicaea to Chalcedon*, 77.

[114] It is well known that even when the divinity of the Spirit was eventually fully recognized at the Council of Constantinople (381) the Creed formulated there stopped short of using the term *homoousios* in connection with the Spirit, affirming instead that the Spirit is "worshipped with" the Father and the Son. This apparent reserve probably reflected an attempt to accommodate some for whom the term *homoousios* already posed difficulties in relation to the Son's relation to the Father. Ayres, *Nicaea and Its Legacy*, 257–58.

[115] Kelly, *Early Christian Doctrines*, 259–60.

[116] Ibid., 262–63.

[117] Placher, *Triune God*, 127.

[118] Kelly, *Early Christian Doctrines*, 262.

precedent for understanding the origin of the Spirit to involve the Son as well as the Father. For example Tertullian, and later Hilary of Poitiers, held that the Spirit originated "*from* the Father *through* the Son". Eastern theologians would not generally have had difficulty in accepting this formulation.[119] However, when Augustine taught that the Spirit proceeds from the Father 'and from the Son' (*filioque*) the seeds of future problems were sown.[120] Augustine's position on the procession of the Spirit was, in fact, quite nuanced. He developed the idea that the Son's agency was necessary to the production of the Spirit but emphasized that this was so only "through the gift of the Father", thus retaining the principle that the Father is the ultimate origin of the Trinitarian persons.[121] It was not until the sixth or seventh centuries that Spanish theologians began to add the *filioque* to the Creed, possibly with the original intention of opposing modalist heresies by emphasizing the distinctiveness of the Father and Son,[122] or of refuting Arian tendencies by affirming their equality.[123] From the ninth century the phrase was commonly used in Western liturgy and it was formally added to the Creed in the West in the eleventh century. Unfortunately, the nuances of Augustine's position had by now been lost and the *filioque* had become one (though not the only) cause of the schism between East and West.

What, then, can the semiotic model contribute to understanding the 'procession' of the Spirit? One way to consider this question is to ask whether the semiotic model offers any useful contribution to the ongoing debate about the *filioque*. Theologians loyal to the Eastern tradition object to the clause on the grounds that it undermines the unity of God by replacing the single unoriginate source of divinity (the Father) with two equal sources (Father and Son). In addition, they regard it as an illegitimate unilateral addition to the Creed agreed at the ecumenical Council of Constantinople. On the other hand, those sympathetic to the *filioque* argue that it is not intended as a denial of

---

[119] O'Collins, *Tripersonal God*, 139.

[120] Kelly, *Early Christian Doctrines*, 275.

[121] O'Collins, *Tripersonal God*, 139.

[122] Ibid., 138.

[123] John McGuckin, "Filioque," in *The Oxford Companion to Christian Thought*, ed. Adrian Hastings, Alistair Mason, and Hugh Pyper (Oxford: Oxford University Press, 2000).

the monarchy of the Father, but as an acknowledgement of the equal-
ity and inter-relatedness of all three Trinitarian persons.[124]

In principle there appear to be three possible approaches that might
be taken to resolve the theological aspects of the dispute about whether
the Spirit 'proceeds' from the Father (alone) or from the Father and
the Son. The first would be to decide unequivocally in favour of one
side or the other, perhaps on the basis of the sorts of theological con-
siderations just mentioned. However, this approach would, whatever
decision was reached, probably fail to resolve the ecclesiological divi-
sions associated with the dispute, and would still leave theological
work to be done on the question of the intra-Trinitarian relations.[125]
The second approach would be to favour one or other version of the
creed in liturgical use, but to argue that it may in fact be interpreted
in such a way as to address the concerns of adherents to the alterna-
tive version. For example, one possible argument is that the statement
that the Spirit proceeds "from the Father" already implies the involve-
ment of the Son because the Father's fatherhood is dependent on the
sonship of the Son.[126] The third approach would be for both sides to
agree to a mutually acceptable re-wording of the Creed. A relatively
minor re-wording that has some precedent in the traditions of both
East and West, and which both sides might now find acceptable, could
follow the formula that the Spirit proceeds "from the Father *through*
the Son".[127]

While any of these three possible approaches might be capable of
patching up some of the theological difficulties posed by the *filioque* it
seems that any of them would face considerable barriers to full accep-
tance by both sides of the dispute, at least as long as they are based
on the affirmation that the origin of the Spirit is by 'procession'. The
reason for this is that all three approaches depend ultimately on the
assumption that we know what is meant when we say that the Spirit
'proceeds'. Unfortunately, this is not the case. As noted above, even
the patristic writers acknowledged that the meaning of 'proceed' in
this context was not clearly understood. One might choose to follow
Thomas Torrance's view that we should let the meaning of the 'pro-
cession' of the Holy Spirit remain a matter for "apophatic reserve and

---

124 Moltmann, *Trinity and the Kingdom*, 181–82.
125 Ibid., 182.
126 O'Collins, *Tripersonal God*, 140.
127 Ibid., 139.

reverence".[128] This appears to be a somewhat inadequate response, however, to a problem that represents not only a difficulty in formulating a coherent doctrine of God, but also a stumbling block to the unity of the Church.

The semiotic model offers a means of overcoming the problem by offering, in place of the mysterious term 'procession', a positive account of the nature of the Spirit as the source of mediation and interpretation. In the semiotic model the Spirit is acknowledged to be *logically* dependent on the Father and the Son (in that order) in the same way that Thirdness is logically dependent on Secondness, and Secondness on Firstness. The Spirit (Thirdness) therefore arises from (proceeds from?) the Father and the Son (Firstness and Secondness), but not in a way that undermines the unique unoriginateness of the Father. Subordinationism is avoided because (as I shall discuss further in §2.4.2) the ordering of Father, Son and Spirit is (like Firstness, Secondness and Thirdness) understood to be a logical *taxis*, not an ontological hierarchy. Furthermore, the problem of the possible implication that the Father has two Sons is avoided in the semiotic model because the Spirit is understood to have an entirely distinctive mode of origination from, and relation to, the Father (and the Son): whereas the Son is the ground of otherness and is related to the Father by being different from him, the Spirit is the ground of mediation and is related to the Father and Son by mediating between them.

My own way of dealing with the problem when reciting the *filioque* clause in liturgical contexts is to choose to understand what I am reciting in the light of this clarification offered by the semiotic model. In other words, I choose to interpret "proceeds from" to mean that the Spirit "is related (to the Father and Son) in a way that is analogous to the place of Thirdness in relation to Firstness and Secondness in Peircean metaphysics". This is, in effect, a personally-adopted version of the second kind of option for the resolution of the *filioque* problem listed above. Obviously, I do not recommend the muttering of Peircean caveats under one's breath when reciting the Creed; rather, I hold the meaning of "proceeds from" implicitly to require reference to some framework of understanding not specified in the Creed itself. I do not think that this could be reasonably objected to by those for whom the implicit meaning of "proceeds from" should be glossed as "the Spirit

---

[128] Torrance, *Christian Doctrine of God*, 193–94.

is related to the Father in a way that is not that of begetting but which we do not understand". Of course, behind any approach that seeks to clarify philosophically what might be meant by 'procession' must lurk questions about the sense in which a metaphysical scheme may be said to legitimately frame or shed light on what we wish to say about the God who is creator of all that is. Nothing I have said here is a denial of the absolute ontological sovereignty of God: this particular solution to the *filioque* problem does not imply a privileging of philosophy over theology, and the same is true of the semiotic model in general. However, full discussion of that issue must be deferred until Chapter 6.

I have suggested, then, a possible interpretation of the existing wording(s) of the Creed that might help to ameliorate the problem of the *filioque* in the manner of the second kind of option listed above. Does the semiotic model suggest any possible re-wordings of the Creed, along the lines of the third kind of option listed above? Drawing on the semiotic model, I tentatively suggest that the beginning of the pneumatological clause of the Creed,

> We believe in the Holy Spirit,
> the Lord, the giver of life,
> *who proceeds from the Father and the Son*...[129]

might be rephrased as,

> We believe in the Holy Spirit,
> the Lord, the giver of life,
> *who is the gift of the Father through the Son*...

By way of commentary on the above formulation, it may be noted that the phrase "gift of the Father" recalls the scriptural witness to the Spirit being "sent" (John 14:26; 15:26) and received (John 20:22). In the economy of salvation the Spirit is *given* to the disciples *through* the Son in the sense that while the Spirit is "from the Father" (John 15:26) the Spirit can be said to be sent either by the Father in the name of the Son (John 14:26) or sent/breathed by the Son (John 15:26; 20:22).

A further reason for choosing the language of 'gift' is that the act of giving was one of the key examples cited by Peirce as an illustration of the irreducibility of Thirdness:

---

[129] The Archbishop's Council, *Common Worship: Services and Prayers for the Church of England* (London: Church House Publishing, 2000), 173.

> The fact that A presents B with a gift C, is a triple relation, and as such cannot possibly be resolved into any combination of dual relations.... We cannot build up the fact that A presents C to B by any aggregate of dual relations between A and B, B and C, and C and A. A may enrich B, B may receive C, and A may part with C, and yet A need not necessarily give C to B. For that, it would be necessary that these three dual relations should not only coexist, but be welded into one fact. (EP 1.251–252; see §1.2.1).

It follows that the statement that the Spirit is the 'gift' (of the Father) immediately identifies the Spirit's distinctive mode of origination: being 'given' by (cf. proceeding) rather than being 'begotten' by the Father. The reworded clause thus refers to the immanent Trinitarian relations as well as their outworking in the economy of salvation. The Son is the Word and ground of all otherness and difference, begotten by the Father. The Spirit is the Gift, the ground of all mediation, given by the Father (to the Son). Again, there need be no suggestion of subordinationism here. There is no fundamental ontological reason to suppose any of giver, receiver or gift to be necessarily inferior to any of the others (though in creaturely giving the value of a gift may, of course, be less than that of either). As Peirce puts it in the quotation above, the relation of giving must be "welded into one fact". The new clause thus also alludes to the perichoretic interdependence of the Trinitarian persons. The Spirit is the gift from the Father to the Son. But the Spirit is the ground of its own giving: without the Thirdness of the Spirit there can be no mediation, no giving. Similarly, without the otherness of the Son there would be no possible recipient of a gift. Thus the Father is the *source* of the Spirit as *gift* to the Son, but is only able to be the source of the gift by virtue of the reality of *otherness* (grounded in the Son) and *mediation* (grounded in the Spirit).

My playful re-wording of the Niceno-Constantinopolitan Creed has resonances, I suggest, with elements of the Western and Eastern traditions alike. In affirming that the Spirit is "through the Son" it draws on the form of words that was, as noted above, at one point the standard teaching of the Eastern Church: that the Spirit proceeds '*out of* the Father *through* the Son'.[130] On the other hand, the recognition of the Spirit as a gift recalls Augustine's idea, with which we have seen that he qualified his espousal of the *filioque*, that, although the Son's agency was necessary to the production of the Spirit, this was so only "through

---

[130] Kelly, *Early Christian Doctrines*, 262.

the gift of the Father".[131] And, of course, the re-worded phrase connects with, and is consistent with, the affirmation of the preceding line of the Creed, that the Spirit is "the Lord, the *giver* of life".

Peirce was generally critical of the Church's emphasis on subscription to its creeds, suggesting that if Jesus had deemed "exact theology" a "vital matter", then, "he would have laid down his own formula in set terms" (CP 6.450). A particular complaint he made about the Creeds was that "the central doctrine of love is not to be found in any one of them" (CP 6.450). He did, however, recommend that the task of reconciling science and religion should be undertaken from within the Church, rather than by attempting to develop a purely rational religion:

> Doubtless a lot of superstition clings to the historical Churches; but superstition is the grime upon the venerable pavement of the sacred edifice, and he who would wash that pavement clean should be willing to get down on his knees to his work inside the Church. (CP 6.447)

I hope that Peirce might have regarded an attempt to reword the Niceno-Constantinopolitan Creed in a metaphysically coherent way, one that is consonant with scripture and which perhaps holds out the possibility of a reconciliation between East and West on the problem of the *filioque*, as a worthwhile theological labour. And perhaps he might even have conceded that the Creed thus reworded, with its acknowledgement of the category of 'gift' as a fundamental metaphysical principle, would constitute an implicit affirmation of the theological centrality of love.

2.4   Persons, Relations, and Perichoresis

2.4.1   The Problem with Relations

Having outlined how the semiotic model coheres with the scriptural and traditional accounts of the Son (§2.1), the Father (§2.2) and the Spirit (§2.3), I now turn to the perennial issue of the Trinitarian 'persons' and their 'relations'.

The question of what is 'one' and what is 'three' in the Trinity can be approached by considering the terms *ousia* and *hypostasis* which,

---

[131] O'Collins, *Tripersonal God*, 139.

at the time of the formulation of the Nicene Creed (325), were synonymous in both standard Greek and in theological usage.[132] The theological distinction between the two terms was first made by Basil of Caesarea, and was motivated by a desire to counter the potentially modalist implications of asserting (as the Nicene council did) that the Father, Son and Spirit share one *ousia/hypostasis*.[133] Basil's distinction between *ousia* and *hypostasis* can be thought of as equivalent to Aristotle's division of the category of substance into the concepts of primary and secondary substances.[134] Primary substance (*prote ousia*) refers to a distinct individual bearer of properties; secondary substance (*deutera ousia*) is the essential nature that makes an individual what it is.[135] Put simply, the Cappadocian innovation was to interpret the word *hypostasis* to mean the same as Aristotle's primary substance (distinct individual) and *ousia* to mean the same as Aristotle's secondary substance (*underlying essence*).[136]

In choosing the term *hypostasis* for what is three in God the Cappadocians had no particular intention of making a connection with anything to do with the concept of 'person'. Basil specifically preferred the term *hypostasis* to *prosopon* (person), arguing that only the former established the genuine distinction between the *hypostases*.[137] The term *prosopon*, in contrast, appeared modalistic to Basil, presumably because the original meaning of the word in Greek referred to an actor's mask, which the actor may use to take on different roles. The Cappadocian concern was to express the concept of the distinction between the *hypostases*, not to assert anything specific about their personhood (though they undoubtedly attributed characteristics to the *hypostases* which would nowadays be regarded as 'personal').[138] As Prestige puts it, *hypostasis* is primarily a metaphysical term for an independent object, whilst *prosopon* is a non-metaphysical term for an

---

[132] Lienhard, *Cappadocian Settlement*, 103.

[133] Ibid., 105.

[134] LaCugna, *God for Us*, 58.

[135] Alston, *Substance and the Trinity*, 185.

[136] Ibid., 186. It is worth noting, however, that this understanding of the distinction between *ousia* and *hypostasis* in terms of Aristotle's primary and secondary substances is not universally accepted: John D. Zizioulas, *Being and Communion: Studies in Personhood and the Church* (Crestwood, NY: St Vladimir's Seminary Press, 1985), 38, note 30.

[137] Lienhard, *Cappadocian Settlement*, 106.

[138] Alston, *Substance and the Trinity*, 187.

individual.[139] For the Cappadocian Fathers, then, the term *hypostasis* meant something closer to 'subsistence' than to 'person'.

It is well known that the Cappadocians sometimes illustrated the difference between *ousia* and *hypostasis* using the analogy of the relation of a universal (for example, humanity in general) to its particulars (three human persons).[140] However, as Sarah Coakley demonstrates in her analysis of the theology of Gregory of Nyssa, the concept of 'person' was being used in this context in a highly metaphorical sense which is very far from any notion of the Trinity as a community of conscious individuals.[141] The situation in the West was complicated, however, by difficulties in translating the Greek terminology. The result was that, whereas Eastern theologians were reluctant to call the *hypostases* 'persons', Latin theologians could not afford to be so circumspect. The most obvious translation of the Greek *hypostasis* would have been its etymological equivalent in Latin, *substantia*, since both mean "that which stands under".[142] However, *substantia* was already established as the translation of the Greek *ousia*, a word which might otherwise have been more naturally translated as *essence*.[143] The Latin theologians were therefore faced with a terminological gap, which they filled by designating the *hypostases* as *personae*. Thus the formula associated with the Cappadocians, *one ousia, three hypostases*, became translated in Latin thought, following Tertullian's precedent, as *one substance, three persons*.[144]

Having developed a terminology with which to refer to the distinctions within the Trinity, the question remained: in what sense are the three *hypostases* distinct from one another, and in what sense are they a unity? The question was posed in the form of a "cunning dilemma" by some, wishing to deny the full equality of the Son to the Father, who argued from the premise that the Trinity must conform to the Aristotelian scheme of categories. In particular, the *hypostases* must fall either under the category of *substance* or of *accident*. The former

---

[139] Prestige, *God in Patristic Thought*, 179.

[140] Kelly, *Early Christian Doctrines*, 265.

[141] Sarah Coakley, "'Persons' in the 'Social' Doctrine of the Trinity: A Critique of Current Analytical Discussion," in *The Trinity*, ed. Stephen T. Davis, Daniel Kendall, and Gerald O'Collins (Oxford: Oxford University Press, 1999), 139.

[142] LaCugna, *God for Us*, 66.

[143] Alston, *Substance and the Trinity*, 187.

[144] For a particularly engaging discussion of these issues see Placher, *Triune God*, 121–31.

option, they argued, led to the notion of three separate divine substances (tri-theism); the latter would imply contingency within the Godhead. The response to this dilemma offered by Augustine was to prove crucially important to subsequent Trinitarian thought. Augustine argued that even if the categories of substance or accident were inappropriate to apply to the *hypostases*, there remained the category of *relation*.[145] The category of relation is often included alongside the other categories of 'accident', which are those things which exist only as properties or modifications of substances.[146] This coheres with the Stoic understanding of relation according to which relations only occur between things already in existence. In contrast, Aristotle's category of relation could be understood as giving rise to the existence of a new entity.[147]

Athanasius and the Cappadocian Fathers had already emphasized the importance of understanding the Father's *relation* to the Son in defining the former as Father. Augustine's particular contribution was to use the category of relation as the basis of a way of articulating how the genuine distinctions between the persons need not contradict an affirmation of God's unity.[148] Augustine's starting point was his understanding of the simplicity of God: unlike finite things there is no possible division between God's being and God's attributes or qualities. The qualities or attributes of God *are* the being of God.[149] In speaking of the being of God Augustine expressed a preference for the terms divinity (*divinitas*) or essence (*essentia*) rather than substance (*substantia*), these former being closer to the Greek *ousia* and conveying better the idea that God is being itself, not a divisible material substance.[150] Augustine's response to the 'cunning dilemma' was to say that Father, Son, and Spirit are terms which indicate relations, and that these relations are essential to the being of God.[151] Some scholars have suggested that Augustine went beyond the idea that the distinctiveness of the 'persons' was grounded in their mutual relations to the more radical claim that these relations were actually *constitutive* of

---

[145] Kelly, *Early Christian Doctrines*, 274.
[146] Kenny, *History of Western Philosophy*, 73–74.
[147] LaCugna, *God for Us*, 59. For another helpful discussion of the theological appropriation of Aristotle's category of relation see Placher, *Triune God*, 143–44.
[148] Ayres, *Nicaea and Its Legacy*, 377.
[149] Ibid., 367.
[150] Ibid., 375; cf. 66–67.
[151] Ibid., 377.

the 'persons' themselves.[152] Others insist that Augustine maintained that the persons are not merely relations but have an individual reality which is in relation to the others.[153] In any case, Augustine's position may be regarded as lying on a trajectory of thought that reached its culmination in Thomas Aquinas's view of the *hypostases* as 'subsistent relations'.[154]

We may say, then, that in Latin thought the category of relation came to assume progressive priority over that of substance or essence. But, if relation rather than substance is taken to be the supreme onto-logical category, the question arises: where do relations come from if there is no pre-relational subsistence capable of entering into relation-ship with other things?[155] As Zizioulas puts it: "Just like 'substance', 'communion' does not exist by itself".[156] If a fully relational meta-physic is held to make talk of substances and essences redundant, are we to imagine an infinite regress of relations? Ultimately the danger is that an ontology which reduces subsistence to relation seems to set up relation as something underlying the being of God. In other words, relation itself appears to become the underlying divine substance. In that case we are back where we started, with the question of how the three Trinitarian *hypostases* are related to the divine *ousia* (substance). What seems to be required is a way of replacing a one-sided emphasis on either *hypostasis* or relation with a more reciprocal understanding of the *hypostases* and their relations, in which the two concepts are seen as mutually dependent.[157]

2.4.2   *A Semiotic Model of the Trinity*

In the first three sections of this chapter I undertook the ground-work for a Peircean approach to Trinitarian thought by drawing attention to parallels between Peirce's three categories and Chris-tian thinking about the Father, Son, and Holy Spirit. I am now in a

---

[152] Kelly, *Early Christian Doctrines*, 274.

[153] Ayres, *Nicaea and Its Legacy*, 378; Toom, *Classical Trinitarian Theology*, 152; cf. Augustine, *The Trinity*, VII.1.2.

[154] LaCugna, *God for Us*, 90.

[155] Harriet A. Harris, "Should We Say That Personhood Is Relational?," *Scottish Journal of Theology* 51 (1998): 224–25. See also Placher, *Triune God*, 143.

[156] Zizioulas, *Being as Communion*, 17. I address the question of whether the semi-otic model implies an 'impersonal' understanding of God in §7.2.1.

[157] Moltmann, *Trinity and the Kingdom*, 172.

position to develop these parallels into a fully-fledged 'semiotic model' of the Trinity.

Let us start from the question of the *unity* of God. It has been common practice to understand the two main traditional approaches to the problem of formulating a Trinitarian affirmation of the oneness of God as reflecting differences between Eastern and Western theological emphases. This is now recognized as an oversimplification. Nevertheless, with due acknowledgment of the complexity of the historical and theological background, it is a distinction that remains helpful for the purposes of understanding the main available options.[158] The approach generally associated with the West is to understand the divine unity in terms of an underlying substance (*ousia*). This approach is sometimes suspected of leading to a philosophically-based account of the Godhead as an impersonal, necessarily existent being, in contrast to the biblically grounded 'personal' conception of God.[159] Furthermore, the view that God's unity rests on an underlying substance which is shared by the persons of the Trinity risks tending towards modalism, because the persons then appear to be mere modes of manifestation of that substance. These problems are avoided by what has traditionally been regarded as the Eastern approach, which is to see the unity of God as derived from the Father by virtue of the fact that he is the sole origin (*archē*) of the other persons of the Trinity.[160]

By virtue of its consonance with the idea that the Father is the ingenerate source of the Son and Spirit (§2.2), the semiotic model has affinities with the Eastern approach to God's unity. The semiotic model has the advantage, however, of avoiding the common suspicion that the Eastern view leads to subordinationism. In Peirce's system of categories, Firstness is prior to Secondness and Thirdness in the sense that the latter two depend logically on the existence of the former. However, this is a logical rather than ontological ordering. In Peirce's logical-mathematical derivation of the categories the presence of Firstness unavoidably gives rise to the existence of Secondness and Thirdness: a dot on a piece of paper, representing Firstness, cannot but imply a difference (Secondness) between the dot and its surround. This difference can, in turn, be re-represented by a pair of dots, between which

---

158 Placher, *Triune God*, 120, note 5.
159 Zizioulas, *God the Trinity*, 24–25.
160 Kelly, *Early Christian Doctrines*, 265.

the continuity of mediation (Thirdness) is implicit (§1.2.2–1.2.3). In other words, the single dot (Firstness) logically implies the concomitant reality of Secondness and Thirdness. Likewise, in Peirce's later phenomenological approach, our experience of the world is never an experience of pure Firstness, Secondness or Thirdness is isolation: we prescind Secondness from Thirdness, and Firstness from Secondness, but having placed ourselves in the experiential presence of Firstness we find that Secondness and Thirdness inevitably and continually crowd back in. Furthermore, as I shall discuss further in §5.2.2, new forms of Firstness in the world are continually emergent from the matrix of the constraints and regularities of Secondness and Thirdness.[161]

This feature of the semiotic model, that the categories are irreducibly dependent upon each other, echoes Athanasius's denial that the ingenerate character of the Father implies subordinationism:

> The holy and blessed Triad is indivisible and one in Itself. When mention is made of the Father, the Word is also included, as also is the Spirit Who is in the Son. If the Son is named, the Father is in the Son, and the Spirit is not outside the Word. For there is a single grace which is fulfilled from the Father through the Son in the Holy Spirit.[162]

This 'logical' ordering – dare one even say logical (but not ontological) subordinationism? – is equivalent to that found in Origen's account of the *taxis* of the Trinitarian persons (§2.2.1), was preserved and approved by the Cappadocian Fathers, and, in a way that illustrates why the East-West stereotype mentioned above is an oversimplification, was not foreign to Augustine.[163] In the semiotic model, then, the unity of the triune God is grounded in the person of the Father, whose correlate in the Peircean logical and phenomenological categories is the category of Firstness. Subordinationism is avoided by virtue of the impossibility, logically or phenomenologically, of isolating the reality of any of the categories from the co-reality of the other two.

A further requirement of any account of the intra-Trinitarian relations is that we must understand God's revelation of Father, Son and Holy Spirit to be a genuine revelation of God's self: God's threeness must be eternally real, not merely an appearance. In addition, this

---

[161] In §7.2.1 I suggest that this is an aspect of the 'goodness' of the created order.
[162] Athanasius, *Epistles to Serapion* I, 14, quoted in Kelly, *Early Christian Doctrines*, 258.
[163] Toom, *Classical Trinitarian Theology*, 135, 154–155.

eternal threeness must be spoken of in such a way as to avoid any implication that this is a contingent, rather than essential, feature of God. The semiotic model meets this requirement because Peirce's three categories each have a distinct and enduring reality (§1.2.3). The ultimate ground of being is neither a neo-Platonic oneness (Firstness) or a Hegelian absolute intelligibility (Thirdness). Just as Firstness, Secondness and Thirdness are enduringly real in the world so, according to the semiotic model of the Trinity, are the Father, Son, and Spirit eternally distinct in the being of God. The semiotic model also complies with the further desideratum of being consistent with the necessary (as opposed to contingent) threeness of God because Peirce's categories are found to be phenomenologically comprehensive (§§1.2.1–1.2.2). No further categories are required beyond those of Firstness, Secondness and Thirdness in order to encompass all the observed characters of experience. In this respect the semiotic model is arguably superior to the traditional psychological and social analogies for the Trinity, a point to which I shall return in §7.1.

In addition to the phenomenological comprehensiveness of the categories there is a further, more subtle, way in which the semiotic model may be seen to comply with the requirement that the threeness of God be understood to be an essential rather than accidental attribute. This arises from consideration of the conditions of the very possibility of counting the number of Trinitarian persons, and is related to one of the ways in which the Cappadocians sought to defend themselves against suspicions of tri-theist tendencies in their way of speaking about three *hypostases*. Specifically, the Cappadocians pointed out that there is a sense in which the category of number is altogether inapplicable to the Godhead. Basil, for example, argues that if numbers are applied to God at all this must be done "reverently", and claims that although each of the persons is spoken of as "one", this does not imply that they can be taken as numerically equivalent in the sense that they may be simply added together.[164] Affirming Basil's injunction, "Let the unapproachable be altogether above and beyond number", William Placher adds:

> Yes, if we are some day granted the vision of God, we will see that we were right to speak of the threeness of Father, Son and Spirit and the oneness of God as both applying to God – but not only the nouns we

---

[164] Kelly, *Early Christian Doctrines*, 268.

use to specify what is three and what is one, but even the numbers themselves do not apply to God in any way we can now imagine.[165]

The semiotic model is able, I suggest, to shed light on Basil's insight in a somewhat more nuanced, and perhaps marginally less apophatic, way than Placher advocates. For although we may speak of 'three' categories, the very notion of a three-fold distinction of categories draws on the category of Secondness, without which the difference (otherness) of the categories would not be recognized. Without Secondness counting to three (or to any other number) would not be possible: counting depends on distinguishing one thing from another, this number from the next. Similarly, for numbers to have any *generality* they must partake of the category of Thirdness. That the number one can refer to one apple, one orange, or one *hypostasis*, and yet mean the same thing in each case (that is, singularity) requires the operation of all three categories: the Firstness that attaches to any singularity, the Secondness that allows one number to be different from another (one apple not two, two oranges not three), and the Thirdness that allows one, two, and three to refer equally to apples, oranges, or anything else. The number three thus appears to have the distinction of being the number of distinct categories necessary to allow numbers to function as numbers. Another way of putting this is to say that, according to the semiotic model, the category of number arises from within the relations between the Trinitarian persons, not from outside them. This is, of course, what we would expect from a theological point of view, since we would not expect to find that the being of God is constrained by any logic or mathematics external to God's own being.

We are returned, then to the problem of 'relations'. I referred in §2.4.1 to the need for a more reciprocal understanding of the nature of the concepts of *hypostasis* (or person) and relation. Part of the problem, perhaps, is that whereas the meanings of the words '*hypostasis*' or 'person' have usually been recognized to be somewhat problematic, the term 'relation' is often used as if it is entirely transparent. This amounts, I suggest, to loose talk about the nature of relations. One aspect of Peirce's metaphysical originality is that his hypothetical scheme of categories invites us to recognize that there is not just one type of relation but three. Firstness, on this view, is what we might call a 'zero-order' relation, the potential for being abstracted or prescinded

---

[165] Placher, *Triune God*, 128–29.

from relation to anything. It may be objected, of course, that if something is abstracted from relation to anything else then we are left not with a particular kind of relation but an absence of relation. Indeed, Augustine grappled with an exactly parallel problem when faced with arguing that grounding the distinctiveness of the persons in their relations was not inconsistent with holding that the distinctive character of the Father is that of unbegottenness, a concept which seems to imply absence of relation (cf. Firstness).[166] The response to such an objection must rest, I think, on the irreducibility of the categories emphasized above. Firstness (cf. the Father) does not exist independently of the other categories (persons); nevertheless, the nature of Firstness is that, while continually *related to* Secondness and Thirdness, it is characterized by being what it is *in itself*, abstracted from such relations. According to this way of thinking, Secondness, then, is the relation of distinction or otherness, of opposition or contrast, and Thirdness is the relation of mediation, the relation that brings disparate things into new relationships.

We have here a glimpse of a radical implication of the semiotic model: namely, that in discussing the relationship between the unity and distinction of the persons of the Trinity, theology may have become tied (as the very language of "unity" and "distinction" exposes) to a limited view of the nature of relations. Just as the possibility of number must come from the Trinity itself, so our talk of Trinitarian 'relations' must somehow acknowledge that the very possibility of relations must arise from *within* the Trinity and not from outside it. If it were otherwise then the category of relation would either be an underlying 'substance' (with modalist implications) or an external constraint on God's being. A Trinitarian account of 'relations' (as opposed to merely a relational account of the Trinity) is precisely what the semiotic model offers. The three *hypostases* are distinct, and *the possibility of this distinctness is derived from the distinction (Secondness) of the Son from the Father.* The Father is not the Son, and the Son is not the Spirit, and the Spirit is not the Father, and all of these negations depend on the otherness that is grounded in the source of otherness, the Son. Similarly, all three persons are in communion with one another, the Father with the Son, the Son with the Spirit, and the Spirit with the Father, and *all of these relations of communion are mediated by the source of all mediation,*

---

166 Toom, *Classical Trinitarian Theology*, 152.

the Spirit. And each hypostasis, which is made distinct from the others by the otherness grounded in the Son, and brought into communion with the others by the mediation grounded in the Spirit, has its own characteristic mode of being, *this possibility of having a distinctive quality and character being grounded in the source of all possibility and quality, the Father.* There are thus three kinds of relation, Firstness, Secondness and Thirdness, and the co-reality of all three kinds of relation is a necessary and sufficient condition of the reality of each kind of relation as a distinct but not independent *hypostasis.* Perhaps this account clarifies what we might understand Aquinas to mean when he calls the hypostases 'subsistent relations'.[167] Furthermore, it calls to mind the concept of *perichōrēsis*, the "being-in-one-another", or "permeation without confusion", of the Trinitarian persons.[168] Indeed, we may perhaps summarize this account of the intra-Trinitarian relations by saying that the ramifying interpenetration of the categories that underpins the dynamic processes of semiosis models the "being-in-one-another" of the Trinitarian persons.[169] In short, semiosis models perichoresis.[170]

The way in which Peirce's system of categories can coherently be taken to 'model' the perichoresis of the Trinitarian persons is a further example, then, of the apparent multiple points of contact between Peircean philosophy and Trinitarian theology. Specifically, I have shown in this Chapter how there are intriguing and non-trivial parallels between the philosophical categories of Firstness, Secondness and Thirdness and theological understandings, of, respectively, the Father, Son and Spirit. I have gone on to argue that some of the

---

[167] Placher, *Triune God*, 142–44.

[168] LaCugna, *God for Us*, 271. The term was initially used by the Cappadocian Fathers to describe the relationship between the two natures of Christ, but was subsequently found to have a more useful role in Trinitarian theology. Ibid., 270–278. Two Latin translations of the term *perichōrēsis* emerged: c*ircumincessio* (from circum-incedere, to move around), and *circuminsessio* (from circum-in-sedere, to sit around). The former of these captures better the dynamic aspect of the concept, and is suggestive of one analogy which is often referred to, that of *perichōrēsis* as a dance, although the Greek for "dance around" (*perichōrēuo*) is etymologically unrelated. Elizabeth A. Johnson, *She Who Is: The Mystery of God in Feminine Theological Discourse* (New York: Crossroad, 1992), 220.

[169] Further examples of the perichoresis of Peirce's categories are found in his taxonomy of signs which I introduced in §1.3.3.

[170] There is a non-trivial parallel with John Polkinghorne's well known slogan, "epistemology models ontology". John Polkinghorne, *Science and Theology: An Introduction* (London: SPCK, 1998), 31.

perennial theological problems associated with talking about the Trinitarian 'persons' and their 'relations' may be constructively approached through a 'semiotic model' of the Trinity. In subsequent chapters I shall argue that the semiotic model opens up the possibility of engaging with questions of Christology and anthropology (Chapter 3), of framing an approach to issues in the philosophy of biology, evolutionary biology and origin of life research (Chapter 4), and of developing a theology of nature drawing on the idea of 'vestiges of the Trinity' in creation (Chapter 5).

If the semiotic model of the Trinity appears to promise such coherence and fruitfulness we will wish to ask, of course, whether Peirce himself saw or intended any Trinitarian resonances in his philosophy. I turn to consider that question in the final section of the present chapter.

2.5   *Peirce and the Trinity*

Peirce had been brought up as a Unitarian. In 1863, aged 23, he married Harriet Melusina ("Zina") Fay having, at her insistence, first been confirmed into the Episcopalian Church.[171] Zina was a feminist intellectual and campaigner, whose interest in the relevance of the doctrine of the Trinity to her cause (she equated the Holy Spirit with the "Infinite Eternal Feminine", and with the biblical personification of Wisdom – cf. §2.3.1) may conceivably have been an influence behind Peirce's triadic formulation of the categories.[172] According to Robert Corrington, Peirce "felt that the basic Trinitarian structure of the broader Anglican Communion was in tune with his semiotic triads".[173] On the other hand, while acknowledging some connection with an interest of Peirce's in Trinitarian ideas, Donna Orange is not convinced that his becoming an Episcopalian was associated with any immediate effect on his conception of God.[174] Donald Gelpi suggests

---

[171] Orange, *Peirce's Conception of God*, 1.

[172] Joseph Brent, *Charles Sanders Peirce: A Life.*, Revised and Enlarged Edition (Bloomington: Indiana University Press, 1998), 64–65. Although Charles and Zina were initially devoted to one another, the marriage became increasingly strained. Zina eventually left him in 1876 and they divorced in 1883.

[173] Robert S. Corrington, *An Introduction to C. S. Peirce: Philosopher, Semiotician and Ecstatic Naturalist* (Lanham: Rowman and Littlefield, 1993), 4.

[174] Orange, *Peirce's Conception of God*, 12.

that Peirce suspected that his triadic semiotics had Trinitarian impli-
cations, though Peirce left this hunch unexplored.[175]

Peirce's specific references to any possible links between his catego-
ries and God are ambiguous. In the late 1880s he wrote:

> We have seen that the conception of the absolute first eludes every
> attempt to grasp it; and so in another sense does that of the absolute
> second; but there is no absolute third, for the third is of its own nature
> relative, and this is what we are always thinking, even when we aim at
> the first or the second. The starting point of the universe, God the Cre-
> ator, is the Absolute First; the terminus of the universe, God completely
> revealed, is the Absolute Second; every state of the universe at a measur-
> able point of time is the third. (EP 1.251)

In this passage God appears to be identified with Firstness and Second-
ness, although not in a specifically Trinitarian sense. Michael Raposa
suggests, in contrast, that it is the category of Thirdness which provi-
ded Peirce with his most adequate tool for speaking about God.[176]

In 1893 Peirce referred to himself as "an individual whose unbiased
study of scientific logic has led him to conclusions not discordant with
traditional dogmas" (CP 6.447). Whether he had in mind the doctrine
of the Trinity is not specified. In a manuscript written in about 1906
Peirce offers his opinions on various questions concerning his belief
in God (CP 6.494–521), but says nothing about the person of Christ
or the doctrine of the Trinity. However, the manuscript ends abruptly
and is presumably incomplete. On the other hand, three decades
earlier, in the Lowell Lecture quoted as the epigraph to this chapter,
Peirce explicitly connected his semiotic terminology to the being of
God.[177] Describing the creator of the world as an "infinite symbol", he
went on to suggest that:

> The interpretant is evidently the Divine *Logos* or word…the *Son of God.*
> The *ground*, being that partaking of which is requisite to any communi-
> cation with the Symbol, corresponds in its function to the *Holy Spirit.*

---

[175] Donald L. Gelpi, *The Gracing of Human Experience: Rethinking the Relationship between Nature and Grace* (Collegeville, Minnesota: The Liturgical Press, 2001), 183.

[176] Michael L. Raposa, *Peirce's Philosophy of Religion* (Bloomington: Indiana University Press, 1989), 79.

[177] Joseph Brent points out that at the time of the Lowell lectures Peirce's thinking may well have been influenced by conversations with his first wife, Zina, whose belief in the Holy Spirit as the female principle in the Trinity was central to her feminism. Brent, *Peirce*, 63–64.

I will not, however, carry this speculation any further, as it may be offensive to the prejudices of some who are present.[178]

As noted at the beginning of this chapter, however, these remarks were made when Peirce's semiotic theory was at a very early stage of development (cf. §1.3.1).[179] Peirce never attempted systematically to develop the Trinitarian argument of this lecture,[180] and in general it seems that he was reluctant to identify God with any of his categories.[181]

Peirce's interpreters are divided on the overall theological leanings of his philosophy. Orange identifies elements in Peirce's theism which appear to be close to process theology, in that Peirce speaks of God achieving his being in the long process of creation.[182] However, she does acknowledge that Peirce's later theism rejected the notion of a merely immanent God in continuity with creation in favour of something sounding much more like creation *ex nihilo*.[183] On the other hand, Raposa sees Peirce's concept of God as a form of panentheism.[184] Corrington's assessment of Peirce's theology attributes to it elements of both panentheism and process theology.[185]

William Power interprets Peirce, in his 1908 paper *A Neglected Argument for the Reality of God* (EP 2.434–450), as suggesting that God should be regarded as the ground or source of the three categories.[186] However, Power does not make any connection between this triadic

---

[178] Quoted in Orange, *Peirce's Conception of God*, 21–22. Peirce's identification of the Logos with the interpretant of the sign (i.e., with the category of Thirdness) contrasts with the model proposed here, in which I suggest that the Son/Logos and Holy Spirit have characteristics in common with the categories of Secondness and Thirdness respectively.

[179] Discerning what Peirce meant here by 'ground' is complicated by the fact that his use of the term changed over time and does not have a place in the terminology of his mature semiotics. Gérard Deledalle, *Charles S. Peirce's Philosophy of Signs: Essays in Comparative Semiotics* (Bloomington: Indiana University Press, 2000), 73. Around 1897 he wrote that a sign stands for an object "not in all respects, but in reference to a sort of idea, which I have sometimes called the ground of the representamen" (CP 2.228), but this may not be the meaning he intended in the passage quoted above.

[180] Raposa, *Peirce's Philosophy of Religion*, 167, note 7.

[181] Ibid., 163, note 23.

[182] Orange, *Peirce's Conception of God*, 78. See also Corrington, *An Introduction to Peirce*, 204, note 1.

[183] Orange, *Peirce's Conception of God*, 80.

[184] Raposa, *Peirce's Philosophy of Religion*, 51.

[185] Corrington, *An Introduction to Peirce*, 202–03.

[186] William Power, "Informative Discourse and Theology," *Religious Studies* 12 (1976): 35.

phenomenology and the doctrine of the Trinity. Gérard Deledalle goes further, offering a Trinitarian interpretation of *A Neglected Argument*,[187] and goes on to attribute to Peirce a neo-Platonic view of the successive emanations of the Son and Spirit from the Father.[188] This contrasts with the proposal for a 'semiotic model' of the Trinity developed in this chapter which, I have argued, avoids any such implications of subordinationism. Donald Gelpi has used Peirce's philosophy as the basis of a social model of the Trinity,[189] an approach which, again, differs from my own.[190] Marianne Shapiro sees connections between the Father and Firstness, the Son and Secondness, and the Spirit and Thirdness, and develops her account in a way that amounts to a sensitivity to the notion of the perichoresis of the Trinitarian Persons, though without employing that particular terminology.[191]

There are other hints in the secondary literature that Peirce's semiotics or categories may be related to the doctrine of the Trinity.[192] Indeed, I am struck by the fact that in conversation with theologians who have taken an interest in Peirce, a common response to my proposal is that it is obvious that Firstness, Secondness and Thirdness have parallels, respectively, with the Father, Son and Spirit in Christian thinking. None have been able to point me, however, to a fully developed Peircean 'model' of the Trinity such as I am proposing here.

---

[187] Deledalle, *Peirce's Philosophy of Signs*, 173.

[188] Ibid., 179–80. Deledalle concedes that his own interpretation of the way in which the categories may be applied to the doctrine of the Trinity is necessarily hierarchical and hence implicitly subordinationist. Personal communication 23 February 2002.

[189] Donald L. Gelpi, *The Divine Mother: A Trinitarian Theology of the Holy Spirit* (Lanham, MD: University Press of America, 1984); ——, "A Peircean Approach to Trinity as Community: A Response to Some Responses," *Horizons* 27, no. 1 (2000).

[190] I discuss social analogies for the Trinity in §7.1.

[191] Marianne Shapiro, *From the Critic's Workbench: Essays in Literature and Semiotics*, ed. Michael Shapiro. (New York: Peter Lang Publishing, 2005), Chapter 22.

[192] See, for example, Corrington, *An Introduction to Peirce*, 72; Smyth, *Reading Peirce Reading*, 70.

SEMIOTICS, INCARNATION AND ANTHROPOLOGY

Man is a sign.

C. S. Peirce, 1868[1]

In the previous chapter I proposed a 'semiotic model' of the Trinity; that is, a way of engaging with traditional Trinitarian thought within a framework provided by Peirce's metaphysical semiotics. I outlined the model with reference almost exclusively to the Trinitarian Persons and their relations within the 'immanent Trinity'. Taken in isolation, the account developed so far would be vulnerable to the criticism that it appears to owe more to a rather abstruse kind of metaphysical speculation than to reflection on the 'economy of salvation'. How, it might be asked, do the ideas explored in Chapter 2 relate to reflection on the person and life of Jesus of Nazareth? Such reflection is, of course, the starting point of the Christian understanding of God as Trinity.[2] In the present chapter I shall test and extend the semiotic model by proposing a new approach to the Christian concept of the Incarnation, and a new way of thinking about related anthropological questions, both theological and scientific.[3]

I begin this chapter, in §3.1.1, by attending to certain features of Jesus' historical ministry. I have chosen to do this via some aspects of

---

[1] Charles S. Peirce, *The Essential Peirce: Selected Philosophical Writings, Volume 1 (1867–1893)*, ed. Nathan Houser and Christian Kloesel (Bloomington: Indiana University Press, 1992), 54. My choice of this phrase as the epigraph to this chapter is not intended to suggest that, at least in the particular passage from which it is drawn, Peirce was arguing for exactly the same concept of human individuals as embodied signs that I shall propose in what follows.

[2] The fact that I have chosen to discuss the immanent Trinity (Chapter 2) before the economic Trinity (Chapter 3) does not represent a denial of the proper epistemological order of this relation. I discuss the relation between creaturely experience of God's self-revelation in the 'economy' and theological reflection on God as Trinity in Chapter 6 (§6.2).

[3] Some of the ideas in this chapter first appeared in a pair of articles originally published in *Theology and Science*: Andrew Robinson and Christopher Southgate, "Incarnation and Peirce's Taxonomy of Signs," *Theology and Science* 8, no. 3 (2010): 265–282, and ——, "Semiotics, Anthropology, and Religious Transformation," *Theology and Science* 8, no. 3 (2010): 283–302.

the New Testament scholarship of N. T. Wright, though other start-ing points might have served my purpose equally well. In §3.1.2 I use Wright's work to introduce Peirce's classification of signs, illustrating his taxonomy by reference to some key events in Jesus' life. Specifi-cally, I propose that, in terms of this taxonomy, the doctrine of the Incarnation may be understood as a recognition that Jesus' life as a whole was an 'iconic qualisign' of the being and presence of God. In §3.1.3 I further explore this idea, examining the concept of a quali-sign in more depth, and comparing my proposal with an alternative Peircean approach to the Incarnation.

In §3.2.1, in order broadly to locate my semiotic account of the Incarnation in relation to other strands of Christological thought, I suggest that the central issues in Christology can be thought of in terms of 'horizontal', 'vertical' and 'depth' dimensions, and I illustrate this scheme with reference to some key New Testament passages. In §3.2.2 I use the scheme as a basis for comparing my 'semiotic model' with Karl Rahner's 'ontology of the symbol', and in §3.2.3 I address two potential objections to the idea of 'Incarnation as qualisign' and to the semiotic model in general.

The semiotic approach to the Incarnation outlined in §§3.1–3.2 raises questions of relevance both to the science of anthropology and to a scientifically-informed theological anthropology. What may be said scientifically about the human capacity for recognizing and inter-preting iconic qualisigns? How does such a capacity relate to other human capacities for sign-use? And how did that capacity evolve? In the second half of the chapter I take up these questions. I begin, in §3.3.1, by suggesting that attempts to understand human evolution in terms of the growth of semiotic ('symbolic') capabilities tend to adopt a hierarchical view of the relation between various kinds of sign. In §3.3.2 I propose, in place of this hierarchical model, the concept of a 'semiotic matrix', and I suggest that human distinctiveness may con-sist in a capacity creatively to juxtapose different types of sign within the matrix. I go on to suggest how the idea of the semiotic matrix may help to explain how, and when, modern human distinctiveness evolved.

In the final sections of the chapter I explore some consequences of this Peircean approach to human evolution for theological anthropol-ogy. In §3.4.1 I suggest that the human capacity for self-transcendence may be thought of in terms of 'the gift of abduction': the possibility of acquiring knowledge beyond that which can be obtained deductively

or inductively. In §3.4.2 I propose a way of thinking about the call to follow Christ in terms of Peirce's three kinds of interpretant (feelings, actions and thoughts), and discuss how Peirce's idea of habits as 'ultimate logical interpretants' may relate to the development of habits of discipleship.

3.1   Incarnation and Peirce's Taxonomy of Signs

3.1.1   Jesus and the Enacted Return of YHWH

As a starting point for my reflections on the Incarnation I shall engage with N. T. Wright's approach to the 'historical' Jesus and his hypothesis about Jesus' own sense of his personal vocation.[4] My approach is not ultimately dependent on the specific details of Wright's thesis, which is admittedly controversial.[5] Nevertheless, Wright's thesis offers a useful initial context within which to develop my hypothesis.

In *Jesus and the Victory of God*, Wright argues that much of Jesus' teaching makes sense only in the context of the place that Jesus would have understood that teaching to have had within the whole story of Israel, and of the subversive twist that he believed his own life and death would give to the fulfilment of that story.[6] The theme of the 'reign' or 'Kingdom' of God is central to Wright's thesis, as indeed it surely must be in any attempt to understand the historical person of Jesus and the context and intention of his life and teaching. In first-century Jewish thought the Kingdom of God was typically not understood as a distant heavenly realm, but in terms of a concrete expectation that Israel's God would come to reign on Earth (202–203). The overarching story of Israel therefore tended to centre on the Temple, which was understood as the dwelling place of God, the centre of the physical world, and the interface between heaven and earth (205).

---

[4] N. T. Wright, *Jesus and the Victory of God* (London: SPCK, 1996); N. T. Wright, "Jesus' Self-Understanding," in *The Incarnation: An Interdisciplinary Symposium on the Incarnation of the Son of God*, ed. Stephen T. Davis, Daniel Kendall, and Gerald O'Collins (Oxford: Oxford University Press, 2002).

[5] See David Catchpole, *Jesus People: The Historical Jesus and the Beginnings of Community* (London: Darton, Longman, Todd, 2006), 56ff; cf. Carey C. Newman, ed., *Jesus and the Restoration of Israel: A Critical Assessment of N. T. Wright's Jesus and the Victory of God* (Downers Grove, IL: InterVarsity Press, 1999).

[6] Wright, *Jesus and the Victory*. Page references within the text in this section are to *Jesus and the Victory of God* unless otherwise stated.

Second-Temple Judaism generally held that the return from exile in Babylon had not brought about the fulfilment of YHWH's promised kingdom. First-century Jewish hope for the kingdom therefore combined a threefold expectation: (a) that the people of Israel would definitively return from exile; (b) that evil (including Israel's enemies) would be finally defeated; and (c) that YHWH would triumphantly return to reign over Israel in the Temple (205–6). Hopes of a messiah formed just one part of this wider expectation: messianic hopes were diverse at this time and did not generally play a central role in second-Temple Judaism.

It is uncontroversial to suggest that Jesus intended, in some way, to announce and contribute to the coming of YHWH's kingdom. Wright's distinctive thesis is that, further than this, Jesus intended to *enact* and *embody* the fulfilment of the hopes of second-Temple Judaism (615). According to Wright's hypothesis, three of Jesus' symbolic actions are of central significance. Of these, the overarching symbolic and narrative framework is provided by Jesus' journey to Jerusalem which, according to Wright, Jesus intended "as the symbol and embodiment of YHWH's return to Zion" (639). The mode of kingly reign that his entry into Jerusalem enacted was a deliberate subversion of first-century Jewish expectations. He opposed violent responses to the Roman occupation, believing, Wright suggests, that the real enemy was not Rome but Satan, the dark power behind Israel's exile (447–451). This call for an abandonment of violent nationalistic aspirations was accompanied by a re-working of the usual symbols of Judaism (428–434). Thus the expectation of restored land became an expectation of restored human lives and communities. The traditional emphasis on the importance of the family was re-defined by his table-fellowship with sinners. The Torah was to find its fulfilment in the praxis expected of those who have received the mercy and forgiveness of the new Kingdom. The time for fasting was over – not because of a replacement of outward religious observance with an inward piety, but as part of the redefinition and inauguration of the Kingdom. So also with the forgiveness of sins, which for first-century Judaism would have been understood, not in terms of an individualistic blessing, but as an historically situated and communally fulfilled accompaniment of the arrival of YHWH and Israel's return from exile.

According to Wright, within this overarching symbol – that of Jesus as the embodiment of the return of YHWH to Jerusalem – stand a

pair of crucial symbolic actions: Jesus' action in the Temple and the Last Supper. For first-century Jews the Temple was not only YHWH's dwelling place, but also the centre of the sacrificial system and a place of great political significance (406–11). Wright argues that Jesus' action in the Temple was an 'acted parable of judgment' – both on the Temple and on Jerusalem (416–7). The significance of the turning over of the traders' tables was, he suggests, that it would have (very temporarily) disrupted the sacrificial system by preventing people from buying animals to sacrifice (423). The action in the Temple summarized and symbolized the message that, as Wright puts it, "Jesus' whole work was aimed at announcing that the day of mourning, of exile, of necessary and god-ordained national separateness, was coming to an end"; that "Jesus was himself in some way responsible for this new state of affairs"; and that "all the Temple had stood for was now available through Jesus and his movement" (435–6).

Hand in hand with Jesus' action in the Temple goes the symbolic enactment that occurred in the Upper Room (437–8). Whether the Last Supper occurred on the day of the Passover meal (as in the Synoptic Gospels) or the day before (John), it is evident that it was some kind of Passover meal (555). Whatever the timing, the meal spoke symbolically of the exodus from Egypt and the forgiveness of sins. But it also indicated that Jesus' own kingdom movement was coming to a climax, and that the new exodus was happening in and through Jesus himself (557). If the meal was celebrated the day before Passover it would have had the additional symbolic significance of inaugurating this new exodus outside the Temple system (because it would not have depended on waiting for the Passover lambs to be sacrificed in the Temple). In this sense the Last Supper and the action in the Temple belong together (558). Importantly, Wright argues, these two events serve the purpose of demonstrating that *Jesus himself*, particularly in his approaching death, is the vehicle for the inauguration of the Kingdom. This is evident, for example, in Jesus' identification of the bread and wine of the Last Supper with his own body and blood (558–9).

Wright refers to these two key events in Jerusalem – the cleansing of the Temple and the Last Supper – as 'symbolic' actions. His overall thesis is summarized in his suggestion that Jesus intended his journey to Jerusalem, and his life as a whole, to "*enact, symbolize and personify*" the return of YHWH to Zion (615, italics mine). In order to set out a semiotic approach to the doctrine of the Incarnation, my initial

task, undertaken in the following section, will be to ask how Wright's expression of Jesus' vocation in terms of 'symbols' and 'symbolizing' can be clarified by Peirce's taxonomy of signs.

3.1.2   *Jesus' Signs and Peirce's Taxonomy*

As I outlined in Chapter 1 (§1.1), Peirce proposed that signification consists of a relationship between three elements: sign, object, and interpretant. My application of Peirce's semiotics to the concept of the Incarnation depends on Peirce's further work on classifying the various possible types of sign. I gave an initial brief outline of Peirce's taxonomy of signs in §§1.3.2–1.3.3. There my aim was to show how every dimension of his semiotics is underpinned by the threefold pattern of the categories. We now need to revisit the taxonomy in greater depth and with the aid of some examples.

Peirce's classification of signs arises from the fact that (a) there are three ways in which something can be a sign-vehicle; (b) there are three possible kinds of relation between the sign and the object; and (c) there are three different modes by which the sign can relate to the interpretant (see Table 2).[7]

The third of the three trichotomies mentioned above (right hand column in Table 2) concerns the three different modes by which the sign is presented to the interpretant. This trichotomy, which Peirce labelled rhemes, dicents and arguments, is a generalisation of the more familiar distinction between terms, propositions and arguments; it will not be of particular importance in the argument that follows.

Table 2: Peirce's taxonomy of signs

Division as to the sign-vehicle embodying the sign	Division as to the relation of the sign to its object	Division as to the relation of the sign to its interpretant
Legisign	Symbol	Argument
Sinsign	Index	Dicent
Qualisign	Icon	Rheme

---

[7] Peirce sets out this taxonomy in his 1903 essay *Nomenclature and Divisions of Triadic Relations, as Far as They Are Determined* (EP 2.289–299).

The second of the trichotomies is the most familiar: it is the distinction between icons, indexes, and symbols (middle column of Table 2). This trichotomy concerns the relationship between the sign and object. An *icon* is a sign that signifies its object by virtue of a relation of resemblance between the sign and object. For example, a portrait represents a particular person by virtue of a resemblance between the image and its object. (There are, in addition, varying amounts of symbolic convention in different portrait styles, but the portrait would not be a portrait if it did not embody *some kind of resemblance* to its subject.) An *index* represents its object by virtue of some direct relationship between the two such that the character that makes the index a sign would be lost if the object were removed.[8] An example is the causal relationship between the direction of the wind and the orientation of a weathervane that makes the latter an index of the former. The direct relation between sign and object in an index is not always a causal one. For example, a paradigmatic example of an index is a pointing finger. The appropriate alignment of the finger is determined by the position, or supposed position, of the object, though the position of the object does not cause the alignment of the finger in any simple manner. Finally, a *symbol* is a sign that is assigned to an object by virtue of a rule of interpretation. For example, most nouns signify their objects by convention. The words 'cat' and 'dog' would each serve just as well as signs if their conventional correspondence to two kinds of popular domestic pet were reversed. Here it is important to note that whereas, in the previous section, I followed Wright's non-technical use of the word 'symbol', Peirce's taxonomy defines symbols much more narrowly as one of three different ways in which signs and objects can be related.

The least-known of Peirce's trichotomies in the taxonomy of signs (left hand column of Table 2) will prove to be central to the argument to be developed below. The distinction concerns the nature of the sign-vehicle itself. (Here I will work down the table, rather than upwards as before.) A *legisign* is a sign that signifies by virtue of being a replica (or token) of a type, that replica having been *produced according to a rule* for the purpose of signifying. All symbols are legisigns but the converse

---

⁸ T. L. Short, *Peirce's Theory of Signs* (Cambridge: Cambridge University Press, 2007), 219.

is not true: not all legisigns are symbols.[9] Where the sign-vehicle is a legisign its relation to its object can be indexical or iconic rather than symbolic. I mentioned above that a pointing finger is an example of an indexical sign: there is an actual relationship between the direction of a line extended from the pointing finger and the position of the object. However, the use of an outstretched arm and forefinger to draw attention to something is a convention, a rule according to which pointing is normally performed. In pointing, therefore, the sign-vehicle itself is a legisign. Hence pointing is an example of an *indexical legisign*. The contour lines on a British Ordnance Survey map are iconic legisigns. They are produced according to a rule (brown lines of a certain shade and thickness – other kinds of line would do, but all Ordnance Survey maps follow this convention). However, the lines represent their object (the contours of the landscape) not by arbitrary convention but iconically – they have the same shape as those actual contours. Similarly, the gesture formed by holding one's hands with the two palms facing and then moving both hands apart (as when an angler describes the size of a catch) is an iconic legisign standing for 'large'. The sign itself is made according to the rules of a cultural convention, but the gesture represents its object iconically (the wide, or increasing, spacing of the hands being an icon of largeness – notoriously, not necessarily an *index* of the actual size of the fish!). Gestures such as these are therefore *iconic legisigns*.

Let us stay for a moment with the concept of an iconic legisign. Iconic legisigns may be more complex than the examples of diagrams (such as maps) or gestures given above. If we think, for example, about Wright's account of the historical Jesus in the light of the taxonomy of signs, we may see that the celebration of the Eucharist is another, more complex, form of iconic legisign. Each Eucharistic celebration follows a (broad) pattern, the 'rules' for which were instituted by Jesus

---

[9] It is easy to confuse the concept of a legisign with that of a symbol, because both involve a rule of interpretation. The confusion can be avoided if it is remembered that symbols (like icons and indexes) are defined in terms of a particular sort of relationship between sign(-vehicle) and object, whereas legisigns are one of the types of sign-vehicle. In the case of a legisign the sign-vehicle is produced according to a rule, whereas in the case of a symbol a rule (additionally) governs the connection between the sign and the object. As the examples that follow illustrate, a sign may be produced according to a rule (i.e., be a legisign) without its relation to its object being determined by a rule (i.e., without being a symbol).

for the purpose of remembering him; specifically (and minimally) of remembering the meal that he shared with his disciples in the Upper Room. The Eucharist is therefore a legisign: a 'type' (the Eucharist in general) replicated in the form of individual 'tokens' (each individual Eucharistic celebration) for the purpose of signifying something (minimally the event of the Last Supper; more fully, the table fellowship to which Jesus' disciples are called). However, the relationship between the sign-vehicle (Eucharist) and object (whether particular meal or fellowship in general) is one of resemblance: it is an icon. Therefore a Eucharistic celebration is an iconic legisign.

The other key event on which Wright focuses in his account of Jesus' work in Jerusalem, the action in the Temple, gives us an example of a *sinsign* (middle row of left hand column, Table 2). A sinsign is a singular occurrence that signifies. Unlike a legisign, therefore, it is not produced according to a rule. Jesus' overturning of the traders' tables was a singular event. He did not repeat it himself, and did not suggest to his followers that they should do so in order to signify something. (It is perhaps fortunate for good order in churches that Jesus instituted the Eucharist as a legisign and only performed his action in the Temple as a sinsign, rather than the reverse!) The sign (turning over the tables) stood – according to Wright – for the destruction of (and thereby judgment on) the Temple. And the relationship between sign and object here is, again, that of a kind of resemblance: the turning over of tables was a minor disruption to the Temple-system that signified a major future catastrophe. Jesus' action in the Temple was therefore an iconic sinsign.

What, then, of the overarching sign ('symbol', in Wright's non-Peircean terminology) to which the Temple-action and Last Supper contribute? What kind of sign is involved when Wright refers to Jesus' intention that his journey to Jerusalem, and indeed his life as a whole, should 'enact, symbolize and personify' the return of YHWH to Zion?[10] This brings me to the crucial move in my proposal for a semiotic approach to the Incarnation. The third kind of way in which something can be a sign-vehicle (other than as legisign or sinsign) is as a *qualisign* (bottom left corner of Table 2). A qualisign is a sign-vehicle that is a sign by virtue of a quality that it instantiates. All qualisigns

---

[10] Wright, *Jesus and the Victory*, 615.

are icons, but the examples given above show that not all icons are qualisigns (icons can also be sinsigns or legisigns). A qualisign cannot signify without being somehow embodied, and in that sense there is some overlap with the category of sinsign (since a qualisign signifies only when embodied in actual instances). But, although its embodiment is necessary to its acting as a sign, it is its instantiated quality (not its instantiation as such) that functions as a sign-vehicle.

Consider the colour of a particular piece of cloth. The colour itself may function as a qualisign: a sign, that is, merely of that colour as a colour. Not all kinds of cloth may be capable of embodying this particular colour; perhaps a certain colour can only be embodied in a very particular kind of fabric. Once so embodied, the colour itself may then stand as a sign of that colour. Of course, the colour may stand for other things in other ways. The colour of the garment may have a symbolic function (e.g., purple symbolizing royalty) or may serve as an indexical sign (chemical examination of the dye may reveal to someone with appropriate expertise where the garment was made). These alternative ways in which the colour may represent an 'object' imply different ways in which the dye may function as a sign-vehicle. In order to signify royalty, the purple colour must be of a particular shade (hence it is a legisign). And the particular chemical characteristics or contaminants of the dye that might allow its origin to be traced are not put there according to a rule, they just happen to be there, and are therefore (from the point of view of allowing the place of manufacture to be identified) a sinsign. But, alongside these other ways in which the colour may act as a sign-vehicle and may relate to an object, the colour itself may signify nothing other than the quality of that particular colour. It is then acting as a qualisign. Indeed, a paradigmatic example of qualisigns is a colour sample of paint or a swatch of fabric. We use such samples to signify nothing other than the possibility of that colour being embodied. In the case of colour samples our interest is in imagining the embodiment of that exact same colour in some other context – for example, on a wall to be painted or in a garment to be made.

A qualisign, then, is a sign-vehicle that functions by representing the very quality that it embodies. I have argued above that, taking the two key events on which Wright focuses, the Eucharist is an iconic legisign and the action in the Temple was an iconic sinsign. Extending my Peircean reading of Wright's account of Jesus' life, *I propose that Jesus' journey to Jerusalem – and not only his journey but his whole*

life – may be understood to be an iconic qualisign of the presence of Israel's God.[11]

3.1.3 *Incarnation as Qualisign*

I do not attach any particular importance to the fact that the three key actions in Wright's thesis are, respectively, an iconic legisign (Last Supper), an iconic sinsign (Temple-action), and an iconic qualisign (journey to Jerusalem), though this apparent sequence happens to have been convenient for the purpose of illustrating some important points about Peirce's taxonomy. What is important is that recognizing the life of Jesus as a qualisign of God's being opens up a new way of thinking about the Incarnation. It is one thing (moving diagonally from top right to bottom left of Table 2) to recognize an *argument* for the existence of God,[12] or even to hold that something is an *index* of the power of God.[13] It is quite another to suggest that something embodies, as a qualisign, the quality of the presence of God. For a qualisign, as we have already noted, only stands for that which it itself is. Now the attributes of God are classically taken to be inseparable from the being or *esse* of God. To put it another way, the quality of God-ness is intrinsic to God's being.[14] Assuming that nothing other than God can embody the full quality of God's being, it follows that, if something is a qualisign of God's being, then that embodiment can be nothing less than the very presence of God. If Jesus' journey to Jerusalem embodied, as qualisign, the coming of YHWH to Israel, then Jesus was the embodiment of God's very self.

The examples of the Last Supper (iconic legisign) and the Temple-action (iconic sinsign) have helped to distinguish these kinds of icon from the significance of Jesus' life as a whole (iconic qualisign).

---

[11] Since all qualisigns are icons we may simply say that Jesus intended to be the embodiment of a qualisign of the saving, transforming, presence of Israel's God, though for clarity I will continue sometimes to refer to qualisigns as iconic qualisigns.

[12] As in the classical theistic 'proofs' for the existence of God.

[13] For example, in response to the claim that he casts out demons by power derived from Satan (and in the context of demands from others for a "sign from heaven"), Jesus responds that, "if it is by the finger of God that I cast out the demons, then the kingdom of God has come to you" (Luke 11:20). In this case Jesus was inviting the crowd to interpret his casting out of demons as an indexical sign of his empowerment by God.

[14] Thomas Aquinas, *The Summa Theologica of Thomas Aquinas*, 22 vols. (London: Burns, Oates and Washbourne, 1920–1924), Part 1, q. 3.a.4.

Confusions may easily arise concerning qualisigns, so let us consider a further set of examples that illustrate the different roles that a quality may play as an element of a sign. Suppose I see a large splash of yellow paint on the road. From the appearance of the splash I may infer that a tin of yellow paint has fallen from a moving vehicle. In this case the yellowness on the road is an indexical sinsign. It is a sign of a singular event (a sign of a paint tin accidentally falling from a lorry, a sign of someone's carelessness, and so on), and therefore, as a sign-vehicle, it is a sinsign. The sign-vehicle was not produced according to a rule for the purpose of signifying, so is not a legisign, and it does not signify merely as the quality embodied (the tin might have contained any colour of paint without altering its significance) so it is not a qualisign. Suppose now that the paint on the road is not in the form of a nondescript splash but in the form of two parallel yellow lines adjacent to the kerb. In the U.K. I will immediately recognize this as a symbolic legisign, a sign that it would be illegal to park my car here. The relation between parallel yellow lines and a prohibition on parking is purely conventional, hence symbolic. The rule (in the Highway Code for drivers) that connects the lines with the prohibition is different to the rules (in the Highways Agency manual for line-painters) that describe how to produce the correct kind of line to function as the required symbol. Suppose, finally, that I look at the splash or the lines and take an interest in the shade of yellow in itself. I may say to myself that that is exactly the colour I would like to paint my summerhouse. In that case the yellow colour is functioning as a qualisign – a sign in which the sign-vehicle is defined as being nothing other than the quality that it represents.

My hypothesis, then, is that the person and life of Jesus of Nazareth embodied the very quality of the being of God. As an iconic qualisign, the life of Jesus acts as a sign by virtue of being nothing other than the quality that it embodied, namely, the quality of God's transforming presence. It is important to emphasize that my suggestion is that it was Jesus' *whole life*, as lived in his particular social and historical context, which embodied the quality of God's being. The Incarnation was not a qualisign of the being of God by virtue only of some biological aspect of Jesus' existence, or some psychological trait or spiritual capacity, but as a bio-social-historical whole. In this regard, the qualisign of Jesus' life may be regarded as analogous to those kinds of quality that are unmistakably a product of a composite of elements but which, nevertheless, have a unitary total quality as a whole. In §1.2.3 I sug-

gested that such qualities might be referred to as 'holistic qualities'. For example, a painting may be composed of a number of elements and yet, as a whole, convey a unitary mood. And a symphony may be constructed from numerous individual notes and several distinct movements and yet embody, as a whole, a unique musical feeling. This is not to imply that the quality of God's eternal being is constituted by a compound or composite of different elements; merely that the finite conditions of creaturely existence give rise to the possibility of a 'holistic' quality emerging that is nothing other than the quality of God's presence.

A further important point is that I fully acknowledge that Jesus' life – like our own lives – included numerous signs of different kinds: for example, his words (symbols); his teaching in parables (forms of icon); his death on the Cross (an index of his obedience to the Father). My distinctive hypothesis, however, is that the sum total of all of these, and the other signs that constituted the total fabric of Jesus' life, was a qualisign of the being of God.

This point may be illustrated by comparing my hypothesis with Jesper Nielsen's Peircean approach to the Christology of John's Gospel. Nielsen's approach is of particular interest because I know of no other attempt to develop a Christology drawing explicitly on Peirce's taxonomy of signs. Nielsen's starting point is the question of the 'semiotic constitution' of Jesus: "How does he signify God? What is his semiotic relation to the Father?".[15] Nielsen's answer is that Jesus was an indexical-dicent-sinsign of the Father. As such, Jesus' semiotic relation to the Father was, according to Nielsen, a manifestation of the category of Secondness in every aspect of Peirce's taxonomy of signs (middle row of Table 2). In contrast, my qualisign approach to the Incarnation, in which Jesus is understood as an (iconic rhematic) qualisign of the Father, takes the relation to be one of Firstness in every element of the taxonomy (bottom row of Table 2).[16] Can these two approaches be reconciled?

---

[15] Jesper Tang Nielsen, "The Secondness of the Fourth Gospel: A Peircean Reading," *Studia Theologica* 60 (2006): 123.

[16] This is not inconsistent with my account, in Chapter 2, of the intra-Trinitarian relation between the Father and the Son as characterized by otherness or Secondness. All sign-object relations involve the category of otherness; the question we are examining in the present chapter is how the relation between Father and Son may be understood in the light of Peirce's taxonomy of sign types.

I suggest that Nielsen's approach captures something true about the nature of Jesus' semiotic relation to the Father, but that it results in a deficient Christology unless supplemented by the 'qualisign' approach. Let me illustrate this by exploring the implications of taking Jesus to be an indexical dicent sinsign of the Father. We start with the aspect of Peirce's taxonomy that concerns the relation of the sign to the interpretant (right hand column of Table 2). A dicent is a sign whose relation to the interpretant is equivalent to a proposition. Like the statement 'diamonds are hard', such a sign may be true or false. This is certainly true, at one level, of the sign that Jesus presented to his listeners. He presents them (us) with a question: do you believe in me or not? An implication of this is that the sign of Jesus can be taken to be true or false: "Why do you not understand what I say? It is because you cannot accept my word…. If I tell the truth, why do you not believe me?" (John 8: 43–46). However, to leave the matter there would be to understand Jesus to present the Father to us, ultimately, in the form of propositional knowledge. That would be to neglect the sense in which Jesus represents the Father rhematically; that is, it would overlook the way in which Jesus simply *presents* the Father to us. In response to Philip's request, "Lord, show us the Father," Jesus replies, "Whoever has *seen* me has *seen* the Father" (John 14: 8–9; italics mine). Of course, we might not take any notice of what Jesus presents if it were not for certain accompanying propositions (dicents) and arguments, some of them supplied by Jesus himself in his lifetime. But a Peircean Christology will be a deficient Christology if it does not take the incarnate Word to be, ultimately, a *rhematic* sign of the Father.

What of Jesus as an index of the Father? That is, how does the sign constituted by Jesus' life relate to that which it represents (middle column of Table 2)? According to Nielsen, "Jesus is a genuine *index* since his relation to God is one of existence, continuity and nature. This is the point of him being the son of God. He derives from the Father, the Father is in him and he is in the Father (John 14:10)".[17] I agree with Nielsen that there is a sense in which Jesus must, for Christians, be held to be indexically related to God (the Father). No adequate Christology would regard Jesus' life as accidentally or arbitrarily related to the one whom he referred to as Father. The exact nature of that direct relation need not be understood in crudely causal terms, though some

---

17   Nielsen, *Secondness of the Fourth Gospel*, 132.

Christologies would do so. For example, if one took the virgin birth to involve some kind of direct causal interference with Jesus' chromosomal make-up then Jesus' life could be taken to be a sign of the Father by virtue of its being a consequence of that direct intervention in the causal nexus of the world. The problem with identifying Jesus as only, or ultimately, an *index* of the Father is that it appears to fall short of what the Christian tradition has wished to say about Jesus. Consider the example of a knock at a door as an index of the presence of someone outside. The sound of the knock has a direct connection with the presence of the person knocking, analogous to the kind of relation that Nielsen wishes to highlight with regard to the connection between Jesus and the Father.[18] But having such a direct (indexical) connection does not necessarily imply any sharing in the nature of the object signified. What is distinctive about the Christian understanding of Jesus is that he is taken to represent the Father *iconically*: he is "the image of the invisible God" (Col. 1:15). Moreover, he is not only an 'image' (icon) of God but "the exact imprint of God's very being" (Heb. 1:3). In other words, Jesus does not merely represent the Father indexically but also iconically. Furthermore, Jesus does not merely represent the Father in some respect but in every respect. The kind (and only kind) of iconic sign of which this is true is an iconic qualisign.

This brings us, finally, to the question of what kind of *sign-vehicle* we should understand Jesus' life to constitute. Nielson suggests that, as a sign-vehicle, the Incarnation was a sinsign – a singularly occurring sign. As Nielsen puts it,

> He [Jesus] is a sinsign because he gets his status as a sign through his unique presence. This is the point of the incarnation (John 1:14). His concrete being makes him a sign.[19]

The emphasis that Incarnational theology places on Jesus' actual physical embodiment may indeed appear to point to the concept of a sinsign – the sign-vehicle that functions as a sign primarily by virtue of its actual occurrence – as the most adequate characterization of Jesus as a sign. Certainly, Christianity is a faith that is tied to an affirmation

---

[18] In fact a knock at the door is usually an indexical *legisign*, rather than a sinsign, because there is a convention that governs how to make the knocking sound. That does not undermine my point here, which could be made just as well if the sound outside the door were made in an unconventional way.

[19] Nielsen, *Secondness of the Fourth Gospel*, 132.

of the historical reality and significance of a particular, actual, human person. In that sense it is reasonable to speak of the Incarnation as a sinsign, a singular signifying event in the history of the cosmos. However, no sign-vehicle of any kind can signify unless actually embodied. Since even a qualisign must be embodied in order to signify it is easy to confuse qualisigns and sinsigns.[20] The point can be illustrated with reference to the examples of various kinds of yellow-coloured sign-vehicle discussed above. A splash of paint on the road is a sinsign insofar as it functions as a sign-vehicle that may be interpreted as a sign of a tin of paint having fallen off a lorry. The same paint splash may function as a qualisign if my interest is purely in the colour of the paint. By analogy, Jesus' life may be taken to be both a sinsign and a qualisign. An account of the Incarnation which focussed on the former at the expense of the latter would fail to touch on the very distinctive Christian claim that Jesus was the embodiment of the very quality of God's being.

3.2   *Semiotics and Christology*

3.2.1   *Three Dimensions of Christology*

In the preceding sections I have sketched a way of re-framing the Christian concept of Incarnation using the resources offered by Peirce's taxonomy of signs. I shall now briefly consider how this semiotic account of the Incarnation might relate to other strands of Christological thought. There are many ways in which the relevant problems might be organized.[21] I find it helpful to think about the issues as falling under the following three broad headings, each characterized by a dichotomy: (1) the issue of the relation between the humanity and the divinity of Jesus; (2) the distinction between Christology 'from below' and Christology 'from above'; and (3) the difference between Christology as a 'puzzle' and Christology as a 'paradigm'. Let us call

---

[20] Even Peirce did not make the distinction as clear as he perhaps ought to have done. See Short, *Peirce's Theory of Signs*, 209–10.

[21] Gerard O'Collins, for example, lists twelve critical issues in current debates on the Incarnation. Gerald O'Collins, "The Incarnation: The Critical Issues," in *The Incarnation: An Interdisciplinary Symposium on the Incarnation of the Son of God*, ed. Stephen T. Davis, Daniel Kendall, and Gerald O'Collins (Oxford: Oxford University Press, 2002).

these the horizontal, vertical, and depth dimensions of Christology respectively.

The horizontal dimension of Christology primarily concerns issues of ontology. In this dimension the major initial trajectories of Christological thought are often narrated in terms of disputes between the Alexandrian and Antiochene 'schools', though these labels are probably best regarded as identifying broad theological emphases rather than well circumscribed historical or philosophical groupings. According to these simplified but nevertheless useful narratives, the Alexandrian school tended to emphasize the unity of the divine and human natures in Jesus. Alexandrian Christology cohered with that school's preference for an Aristotelian anthropology, in which the human soul was understood as the form of (and therefore as inseparable from) the human body.[22] The extreme version of the Alexandrian position was that of Apollinarius, who held that the Logos replaced the human soul of Jesus, thus endangering the affirmation of Jesus' full humanity. The Antiochene school, in contrast, tended to emphasize the distinctiveness of the human and divine natures of Jesus, a view stemming from a Platonic anthropology according to which the human soul and body were more contingently united than on the Aristotelian view. An extreme version of the Antiochene position was that of Nestorius, who held that the divine and human natures were 'conjoined' in some kind of 'co-operative union' within the man Jesus, with the risk of denying the divinity of Jesus and implying the presence of two distinct persons existing within one body.[23] These debates culminated in the Chalcedonian formulation, a compromise according to which Jesus possessed *two natures* (divine and human) which met inseparably but unconfusedly in *one person*. In spite of the unambiguous emphasis of Chalcedon on the humanity as well as the divinity of Jesus, subsequent Christian piety has often tended towards docetism, in one way or another denying Jesus' full humanity.[24] On the other hand some strands of current thought deny the plausibility of attributing divinity to Jesus.[25]

---

[22] F. LeRon Shults, *Christology and Science* (Aldershot: Ashgate, 2008), 26–33.

[23] Ibid., 28.

[24] Terrence W. Tilley, *The Disciples' Jesus: Christology as Reconciling Practice* (New York: Orbis Books, 2008), 216.

[25] John Hick, *The Myth of God Incarnate* (Louiseville: Westminster John Knox, 1977).

Attempts to affirm the coherence of the Chalcedonian formula generally have to revisit the debates that followed Chalcedon. These related to questions such as how Jesus' divine attributes are communicated to his human nature and *vice versa* (the concept of the *communicatio idiomatum*), whether he had one will or two (the monothelite controversy, settled in favour of two wills, divine and human, at the Third Council of Constantinople in 681), and whether or not his human nature existed as a person before it was assumed by the eternal Word (sometimes expressed in terms of the anhypostasis-enhypostasis distinction or progression).[26] Undercutting these debates, however, is a more fundamental issue about what is meant by a human or a divine 'nature'. In exploring the intricate logical difficulties of the relation between the two natures it is possible to overlook the fact that the divine nature must be considered to be of an absolutely different kind to the human nature. The language of 'two natures' may tend to imply that the problem is that of how two competing things (divine nature and human nature) can co-exist without one subsuming the other. In the horizontal dimension of Christology, then, the danger is of treating the divine and human natures as two things of the same underlying kind, thereby making God seem to be merely one more entity among others within the created order. The fundamental problem in the horizonatal dimension of Christology is the question of how the created fabric of the world could be the dwelling place of its transcendent creator. As we shall see in more detail later in the chapter, my semiotic approach to the Incarnation offers a new approach to this 'horizontal' aspect of the Christological question.

Whereas the horizontal dimension of Christology primarily involves issues of ontology concerning the relation between the humanity and divinity of Jesus, the vertical dimension – in which the distinction between Christologies 'from below' and 'from above' is made – has epistemological as well as ontological aspects. Christological thinking 'from below' typically begins with consideration of the human person of Jesus and his social and historical context, as reflected upon by the worshipping community, and drawing where necessary on the methods and insights of history, science, and other areas of human inquiry. A

---

[26] For detailed contemporary philosophical analysis of these and related issues see Oliver D. Crisp, *Divinity and Humanity: The Incarnation Reconsidered* (Cambridge: Cambridge University Press, 2007).

Christology from below will use the material provided by such reflec-
tions to construct an account of the relation between the human Jesus
and God. For example, a Christology from below may attempt to use
these resources to derive, or to justify, the claim that Jesus was fully
divine. In order to make sense of such a claim one might then find the
need to give a theological account of the relation of (the divine) Jesus
to God the Father, and from there the need for some kind of Trini-
tarian (or binitarian) understanding of God might become apparent.
In contrast, Christological thinking 'from above' tends to begin from
ontological premises or hypotheses concerning the being of God
and move from these to reflection on the human person of Jesus. An
approach from above might ask, for example, how the second person
of the Trinity came to become incarnate in a human being, and what
implications that has for understanding the personhood of the par-
ticular human in question.[27] Such an ontological 'top-down' approach
will, however, raise epistemological questions about the appropriate
starting point for reasoning about the theological relevance of the
human person of Jesus, and about how one has arrived at the relevant
premises about the being of God. In this regard, several recent com-
mentators have emphasized that the distinction between Christologies
from below and from above is unhelpful if it is framed in such a way
as to set up a false dichotomy.[28] All (human) reflection on the person
of Jesus must necessarily start from below. However, once any kind
of theological hypothesis is formulated (such as the hypothesis that
Jesus was in some sense divine) then further bottom-up reflection will
necessarily take place in the context of (modifiable) top-down presup-
positions, and *vice versa*.

---

[27] The relationship between bottom-up and top-down Christologies can be seen
even in the New Testament accounts. On the face of it, the Gospel accounts are
approaches to the life and significance of Jesus 'from below'. There is a growing con-
sensus, however, that attempts to re-construct a purely historical account of Jesus'
life from the Gospel material are fraught with difficulty: the narratives are already
shaped by (top-down) theological concerns (Stephen E. Fowl, "The Gospels and 'the
Historical Jesus'," in *The Cambridge Companion to the Gospels*, ed. Stephen C. Barton,
Cambridge: Cambridge University Press, 2006, 82). The most explicit formulation of
Incarnational thought in the New Testament is found in the prologue of John's Gos-
pel and is robustly top-down in character: "In the beginning was the Word, and the
Word was with God, and the Word was God…And the Word became flesh and lived
among us." (John 1:1, 14).

[28] E.g., Colin J. D. Greene, *Christology in Cultural Perspective: Marking out the
Horizons* (Grand Rapids: William B. Eerdmans, 2003); 18–19, Tilley, *The Disciples'
Jesus*, 35–36.

In short, the danger in the vertical dimension of Christology is that of epistemological foundationalism: neither the bottom-up or top-down approaches can stand alone. A bottom-up epistemology may and must lead to, and be supported by, a top-down ontology. All our knowing is human knowing with human epistemological limitations. However, if we are to hold that humans are capable of knowing anything of God then we must suppose that God has graciously created a world that is ontologically constituted in such a way as to make such creaturely knowledge possible. In the vertical dimension of Christology, bottom-up epistemology must be in reciprocal relation with top-down ontology. The Christological approach in this chapter has so far been primarily a bottom-up approach, beginning with reflection on the historical person of Jesus in the light of the insights of semiotic theory. However, the overall theological programme within which the thinking outlined in this chapter is located is the (top-down) approach constituted by the semiotic model of the Trinity developed in Chapter 2. Epistemologically my bottom-up (historical-semiotic) approach to the Incarnation may be regarded as a route to the top-down Trinitarian model. Conversely, the (semiotic) Trinitarian model will be justified to the extent that it provides a coherent ontological basis for the possibility of the bottom-up Incarnational thinking.[29]

In addition to the horizontal (human vs. divine) and vertical (from below vs. from above) dimensions of Christology, I suggest that thinking about the Incarnation varies in a third dimension. I call this the 'depth' dimension of Christology and I identify its two poles as the 'puzzle' and the 'paradigm' approaches. The Incarnation is regarded as a puzzle if it is assumed that we already possess the necessary pieces of knowledge about the world and about God: the puzzle is then to work out how the pieces can be fitted together. At the other pole, recognition of the reality of the Incarnation is taken to determine, in at least some senses, our knowledge of both God and the world. Rather than being a puzzle to be solved, the Incarnation provides the key to a new paradigm within which our understanding of God and the world must both be re-framed.[30] It is well recognized that the New Testament is not much concerned with speculation in what I have called

---

[29] I shall return to discuss the importance of such reciprocity for questions of theological method in Chapter 6 (especially §6.2).

[30] Cf. D. M. Baillie, *God Was in Christ: An Essay on Incarnation and Atonement* (London: Faber and Faber, 1948), Chapter 3.

the horizontal dimension of Christology. However, if scripture is thin in the horizontal dimension of Christology, it may be said to major on the depth dimension. The New Testament is not concerned with the identity of Jesus as a puzzle to be solved in the context of fixed notions of God and the world.[31] Rather, it presents Jesus as the key to a new model for life, and a new paradigm through which to understand God's relation to the created order. If we think we already know what we mean by 'human' (or 'the world'), and what we mean by 'God', then the Christological puzzle is: how did God become human? In contrast, if we ask, what are the implications of our understanding of God and the world *if* it is the case that God was in Christ reconciling the world to himself (2 Cor. 5:19, NRSV, alternative translation) then we open ourselves to a paradigm shift in our understanding of God, the world, and the relation between the two. Whereas solving a Christological puzzle could leave our basic understanding of the world more or less unchanged, engaging in Incarnational thought as a new paradigm may invite a transformation of our worldview. Moreover, this transformation of worldview may have practical implications.

Thus while the horizontal dimension of Christology is primarily concerned with ontology, and the vertical dimension involves both ontology and epistemology, the depth dimension might be thought of as bringing together ontology, epistemology, and praxis. In that sense the depth dimension of Christology may be the most important dimension from the point of view of a 'pragmatic' engagement with the Gospel.

3.2.2 *Qualisign or Real-symbol?: Peirce vs. Rahner*

The doctrine of the Trinity and Chalcedonian Christology were both originally constructed in dialogue with, and using the resources of, the metaphysical frameworks of contemporary philosophical systems.[32] The problem arises: "What happens to Christology when the metaphysical superstructure is no longer in place and the ontology of substance on which much of its logical consistency was based has

---

[31] Cf. Joel B. Green, "The Gospel According to Mark," in *The Cambridge Companion to the Gospels*, ed. Stephen C. Barton (Cambridge: Cambridge University Press, 2006), 152.

[32] Shults, *Christology and Science*, 11.

been consigned to the philosophical dustbin?".[33] Putting the question in such strong terms may risk oversimplification of some complex historical and philosophical issues. Nevertheless, there remains the question of how to continue to articulate an Incarnational Christology in the context of shifting metaphysical presuppositions, and even in the face of scepticism about the place of metaphysics in rational thought (a theme to which I shall return in §6.1). One option is to attempt to reconfigure Christological thought without reference to any metaphysical framework or assumptions. Another option is to look for an alternative metaphysic. Karl Rahner's Christology is particularly interesting for my purposes because, not only is it a bold attempt to develop a new metaphysical framework for Christian thought, but also because the metaphysic that Rahner proposes, his 'ontology of the symbol', is implicitly semiotic in character. In this section I use the three dimensional heuristic scheme developed above to compare my Peircean approach to Christology with Rahner's account of the Incarnation as a 'real-symbol' of God.

Let us start with the horizontal dimension of Christology. In this dimension, the key characteristic of Rahner's theology is that it is consistently oriented towards providing grounds for the conviction that God does not merely communicate things *about* God's self to creatures; rather, God communicates God's-self. This has implications for our understanding of God and God's creation. Rahner is emphatically anti-docetic: the Incarnation is not a case of God having "wrapped himself in the disguise of a human nature which only clings to him exteriorly and has come to this earth to set things right because they could not be managed from heaven".[34] Rather, the material reality of creatures has the capacity to embody *in itself* the presence of the Logos. As Rahner puts it: "the creature is endowed, by virtue of its inmost essence and constitution, with the possibility of being assumed, of becoming the material of a possible history of God. God's creative act always drafts the creature as the paradigm of a possible utterance of himself".[35] This way of expressing the relation between the divine and the human in Jesus appears somewhat different to, though not necessarily inconsistent with, the Chalcedonian 'two natures' formulation.

---

[33] Greene, *Christology in Cultural Perspective*, 171.
[34] Karl Rahner, *Theological Investigations Volume 4*, trans. Kevin Smyth (London: Darton, Longman & Todd, 1966), 111.
[35] Ibid., 115.

It coheres closely, however, with the example of a coloured piece of cloth that I have used to illustrate the principle of an iconic qualisign. The colour in question must be embodied in order to function as a sign, but it is not the embodiment as such that is the sign, but the colour so embodied. To press the metaphor, suppose that only a certain type of fabric has the necessary properties to permit this colour to be embodied in it. Only a certain creature is drafted, in its "inmost essence and constitution" as exactly the "material" of a possible utterance of God (cf. quotation above).

To clarify this point a variation of the analogy may be helpful. Suppose that a particular kind of cloth is uniquely capable of holding a certain dye. After being soaked in this dye the cloth has a specific colour, un-reproducible by any other means. This colour may be taken as an iconic qualisign – a qualisign of precisely that colour. Although a semiotic theology of the Incarnation could be worked out along these lines it would not, I suggest, correspond exactly to Rahner's view. A closer analogy to Rahner's position would be a scenario in which no dye is involved. Suppose that a certain kind of fabric is intrinsically coloured by virtue of the structure of the fabric itself. Suppose also that variations in the structure of the fabric are possible, with corresponding variations in colour. These variations in structure might occur by trial and error in the manufacturing process, or by some kind of purposeful development. Rahner's view of the Incarnation, translated into the terms of the semiotic model, is that the fabric of the created order evolves to a point at which it embodies (in the person of Jesus) the 'colour' of God. In this respect, in the horizontal dimension, my Peircean approach appears to be consonant with Rahner's Christology: in Jesus the fabric of the world has become an embodied qualisign of God – the Word/Logos incarnate.

The differences between my approach and that of Rahner become apparent when we consider Rahner's Christology in the 'vertical' dimension. Where I wish to speak of Jesus as an iconic qualisign of God's being, Rahner understands the Incarnation as what he calls a 'real-symbol' of God. The concept of the real-symbol is part of Rahner's general ontology of symbols, which is set out in his essay *The Theology of the Symbol*.[36] This 'ontology' is summarized in a pair of

---

[36] Ibid., 221–51. The starting point of the essay is the status of the Roman Catholic practice of devotion to the sacred heart of Jesus, but the ontology that Rahner goes on

principles: first, that all entities are 'symbolic' because they necessarily 'express' themselves; second, that it is by 'expressing' itself that each entity constitutes itself.[37] According to Rahner, this reflects a universal metaphysical principle, "that each being – in as much as it has and realises being – is itself primarily 'symbolic'".[38] It is characteristic of Rahner's thought that a central motivation for this formulation of the ontology of symbols is his desire to avoid what he elsewhere refers to as 'extrinsicism' in our conception of the relation between God and the world.[39] In his ontology of the symbol this is reflected in a distinction he makes between 'real' (genuine) symbols (the ontology outlined above) and 'representational' symbols.[40] According to Rahner, representational symbols, such as "arbitrary signs", "signals", and "codes" are "merely derivative modes of symbolic being", in which,

> …anything could be a symbol of anything else, the orientation from the symbol to the thing symbolised could run the other way round or be determined accidentally, from a view point extrinsic to the matter itself, by the human observer, who finds one aspect more telling than another.[41]

In contrast, a 'real-symbol' is the full and genuine expression of the entity in question, and indeed in some sense constitutes the being of that entity.

According to Rahner's theology of the symbol, the Logos that is incarnate in a human person, Jesus, is the 'real-symbol' of God the Father.[42] How does this view of the Incarnation as the real-symbol of

---

to outline may arguably be read much more generally as a key to his whole theology. As Rahner puts it, "the whole of theology is incomprehensible if it is not essentially a theology of symbols, although in general very little attention is paid, systematically or expressly, to this basic characteristic". Rahner, *Theological Investigations Volume 4*, 235.

[37] Rahner, *Theological Investigations Volume 4*, 224, 34.

[38] Ibid., 229–30.

[39] Karl Rahner, *Theological Investigations*, 2nd ed., Vol. 1 (London: Darton, Longman & Todd, 1965), 298.

[40] Rahner, *Theological Investigations Volume 4*, 224–25.

[41] Ibid., 224–225. If all entities 'express' themselves by virtue of the intrinsic symbolic structure of being we may ask, to whom is this self-expression directed? Rahner's response is that this is a "secondary question": the self-expression and return of an entity to itself is ontologically primary, (Rahner, *Theological Investigations Volume 4*, 225, 234). In this respect, Rahner's semiotics differs profoundly from that of Peirce, for whom the role of the interpreter is central (§1.3; §4.2).

[42] Karl Rahner, *The Trinity*, trans. Joseph Donceel, with an Introduction, Index and Glossary by Catherine Mowry LaCugna (New York: Crossroad Herder, 1999), 32–33. See also Rahner, *Theological Investigations Volume 4*, 236.

the Father compare with my account of the Incarnation as a qualisign of God? The key similarity between my approach and that of Rahner is the conviction that, in some sense, reality has a fundamentally semiotic (symbolic, in Rahner's terminology) character. For Rahner the basis of this conviction is (1) the recognition that our knowledge of God is mediated by symbols (signs in Peirce's terminology), combined with (2) a commitment to the idea that the knowledge of God to which we thereby have access is genuine knowledge of God. These two propositions are only compatible if symbols (signs) are capable of providing a real, 'intrinsic', representation of the underlying reality to which they are connected.[43] I differ from Rahner in my understanding of the basic ontology of symbols (signs). For Rahner, as I have noted, the primary principle is that all entities "express themselves" and only secondarily does this self-expression become available as a basis for knowledge of the underlying reality by a knowing subject. In Peirce's semiotics, in contrast, although the relation between sign and object exists prior to the interpretation of the sign, it is only when the sign is *interpreted* as a sign of the object that the sign-relation is fully realized.[44] This is reflected in my semiotic model of the 'intra'-Trinitarian relations (Chapter 2), in which the being of God is understood as an irreducibly triadic relation between Father, Son/Word, and Holy Spirit (the latter being the ground of mediation and interpretation). Rahner assumes that taking interpretation to be an essential aspect of the sign-relation would leave symbols (signs) as merely arbitrarily, extrinsically, related to their objects.[45] Peirce's semiotics shows this to be an unnecessary assumption. Rahner in effect assumes that the only kind of interpreted sign is (in Peirce's terms) a symbol, whose relation to its object is given by convention. He does not allow for indexes (whose connection with their objects are direct or causal), or icons (which are connected to their objects by virtue of intrinsic resemblances).

The difference between my approach and Rahner's in the vertical dimension may be summarized by saying that Rahner's Christology – at least insofar as he develops it in terms of the concept of the real-symbol – seems to start 'from above', whereas the semiotic model

---

[43] Stephen M. Fields, *Being as Symbol: On the Origins and Development of Karl Rahner's Metaphysics* (Washington D.C.: Georgetown University Press, 2000), Chapter 2.

[44] T. L. Short, "The Development of Peirce's Theory of Signs," in *The Cambridge Companion to Peirce*, ed. Cheryl Misak (Cambridge: Cambridge University Press, 2004), 223.

[45] Rahner, *Theological Investigations Volume 4*, 225.

allows for a much more reciprocal relation between the bottom-up and top-down approaches.[46] This is because a Peircean semiotic metaphysic allows, in principle, for *continuity between human religious understanding, everyday human knowing, and non-human sign-use*. If, as Rahner holds, knowledge of the reality of particular beings (finite or infinite) is available only via the real-symbols that are the self-expression and self-constitution of those beings, then knowledge of those realities must rest on some capacity to make sense of real-symbols. Since real-symbols, in Rahner's account, are sharply distinguished from ordinary signification it does not appear that Rahner's ontology of the symbol could, in itself, offer an evolutionary account of the origin of the capacity to know anything of, or about, fundamental reality (which is not to deny Rahner's overarching interest in cosmological evolution). Just as I differ from Rahner, then, in my account of the 'intra'-Trinitarian relations (I understand the Spirit to be the ground of the category of mediation and interpretation, whereas Rahner's account tends to neglect this aspect of the semiotic triad), so I differ from Rahner in my account of the semiotic structure of created reality. According to my hypothesis, *everyday signification* has, by God's grace, the very structure necessary for the interpretation of those signs – pre-eminently the sign constituted by the Incarnation – which reveal the reality and character of God's being. I return to this theme in later sections of this chapter.

This brings us to the 'depth' dimension of Rahner's Christology. I suggest that Rahner's thinking on the Incarnation clearly tends towards the 'paradigm' rather than the 'puzzle' pole of this dimension, as is evident in his notion of the 'supernatural existential'. The concept of the supernatural existential may be regarded as an attempt to hold together three affirmations about God's self-communication. First, as already noted, God's self-communication to the creature is the gift of God's-self, not merely information *about* God. Second, this self-communication is utterly gratuitous, a manifestation "of a free and unmerited grace, of a miracle of God's free love for spiritual

---

[46] In footnotes, Rahner does acknowledge in passing that the (top-down) presuppositions of his Trinitarian theology depend on (bottom-up) experiences of revelation (*Theological Investigations Volume 4*, 229) and that his account "simplifies matters by presupposing ontological and theological principles which would have to be demonstrated, not supposed, in a properly worked out theology of the symbol" (225–226).

creatures".[47] In this sense the supernatural existential is 'supernatural'. Third, however, as Mark Taylor puts it,

> …for there to be a genuine self-*communication* of God, the divine communication must respect the capacities of the human addressee of the communication. There is a real sense in which the self-communication of God must correspond to the essential nature of addressee.[48]

In *Hearers of the Word* Rahner says simply, "God can reveal only what man is able to hear".[49] In this sense the supernatural existential is an 'existential': humans are constituted in such a way as to be open to the self-communication of God. To accept this is not simply to recognize a solution to the *puzzle* of Christology, it is to allow the Incarnation to open up an entirely new *paradigm* for thinking about the nature of humanity.

While the semiotic model is able to affirm all three of these aspects of Rahner's 'supernatural existential', my approach coheres with Rahner in particularly interesting ways on the last. Thus we may ask: in what sense is the world – and the human creature in particular – constituted as a potential recipient of God's self-communication? In semiotic terms, what is it about humans that makes us capable of interpreting signs of (as opposed to merely about) God? That this is an issue in the depth dimension of Christology is evident from the fact that it could be posed as either a puzzle or a paradigm. Posed merely as a puzzle the question would simply be: given what we know about creatures and about God, what claim can a creature have to know anything of their creator? In contrast, as a path to a potential paradigm-shift in worldview, the question is: how must we understand God and the world *if it is the case* that the world can embody, and a creature make an appropriate interpretative response to, the quality of God's transforming presence? In this regard I suggest that, compared with Rahner's ontology of the symbol, the Peircean semiotic approach has the advantage that it opens up the possibility of exploring this question in the depth-dimension of Christology in a way that is able to make

---

[47] Karl Rahner, *Foundations of the Christian Faith: An Introduction to the Idea of Christianity*, trans. William V. Dych (New York: Crossroad, 2006), 127.

[48] Mark Lloyd Taylor, *God Is Love: A Study in the Theology of Karl Rahner* (Atlanta: Scholars Press, 1986), 115.

[49] Karl Rahner, *Hearers of the Word*, trans. Ronald Walls, Revised Edition (London and Sydney: Sheed and Ward, 1969), 115.

connections between theological anthropology and scientific palaeo-anthropology. In the second half of this chapter (§§3.3–3.4) I shall turn to that task, beginning by outlining a new scientific hypothesis in palaeo-anthropology that arises from, and may even contribute to, reflection on the theology of the Incarnation. Before doing so, I pause to consider two potential objections to my scheme: one to the idea of the Incarnation as a Peircean qualisign; the other to the 'semiotic model of the Trinity' in general.

3.2.3   Fused Substances and Broken Symbols: Response to Two Objections

A key example that I used to illustrate the concept of a qualisign in §3.1.2 was that of the colour of a piece of cloth, where the colour in question acts as a sign of that colour in itself (a sign, for example, of the possibility of that colour occurring again in another piece of cloth). Although this illustration has some advantages, it also easily gives rise to an interpretation that, while understandable, would be at odds with the Christological approach for which I wish to argue. LeRon Shults has expressed the objection by suggesting that the example of the coloured cloth:

> … runs the risk of denying the distinction between the infinite (and eternal) presence of God as Creator and the fleshly coming-to-be of this finite man from Nazareth. Are we not faced with the same kind of issue that worried the Council of Chalcedon about the extreme Alexandrian tendencies of Eutyches, which led him to fuse the divine and human natures? If the being of God *is* that quality that is embodied in the life of Jesus, and his life is nothing other than that quality, then the divine being seems "immanently" fused with this finite being, denying what has traditionally been affirmed as the "transcendence" of God in relation to creation. The solution is not, of course, swinging toward the Antiochene (Nestorian) extreme in reaction, but escaping the metaphysical categories that force Christological discourse to operate within this dialectic.[50]

I accept that Shults is correct that the use of the example of a coloured piece of cloth may be misleading as an illustration of the concept of a qualisign, if it is taken to imply that qualities are necessarily predicated of substances. What the cloth example helps to emphasize, however,

---

[50] F. LeRon Shults, "Transforming Theological Symbols," *Zygon: Journal of Religion and Science* 46, no. 3 (2010): 713–732. Cf. Shults, *Christology and Science*, Chapter 2.

is that although, in a qualisign, it is the quality itself that signifies – not the actuality (as opposed to non-actuality) of that quality in that particular place – nevertheless the quality must be actualized (embodied) in order to signify. There is nothing in this way of putting it that presupposes that qualities are accidental attributes of substances; as I mentioned in §1.2.1, Peirce is explicit in excluding Substance (and Being) from his list of categories. All that is required for a qualisign to function as a sign is that the quality in question can be actualized. In the example, the cloth merely serves the purpose of illustrating the fact that there may be certain conditions necessary for the actualization of any particular quality. The quality of the colours of a rainbow would have equally served the purpose: certain physical conditions are necessary to the production of those particular colours (light, water droplets, etc.) but there is no need to suppose that the colours (qualities) that arise if these conditions obtain are a property predicated of some underlying Aristotelian substance.

For this reason I do not think that the 'qualisign' approach to the Incarnation has the unwanted Christological implications that Shults is concerned about. I am not suggesting that the person of Jesus of Nazareth is composed of a Eutychian fusion of two different substances, human and divine. Rather, I affirm (as an aspect of the 'depth' dimension of Christology) that the created order is such as to be capable (in certain very specific circumstances) of actualizing the very quality of the being of God. The Christian tradition has wished to say of this actualization of God's quality that it is the Incarnation of the Word (John 1:14); that in the human person of Jesus "all the fullness of God was pleased to dwell" (Col. 1:19). The transcendence of God (the absolute difference between creator and creation) is not thereby threatened, though certainly the relation of the world to God is seen in a new light (as surely it must be in any adequate Christology).

A related criticism, also articulated by Shults, is that my proposed semiotic model of the Trinity is insufficiently apophatic in the way it seeks to relate observations about creaturely semiosis to knowledge of God. Shults and I both hold that the metaphysical framework in which Christian thinking about Incarnation and Trinity was formulated needs to be revised. Shults suspects, however, that I underestimate just how radical a metaphysical revision is required.[51] He frames

---

[51] Shults, *Transforming Theological Symbols*, 726.

this criticism in terms of Robert Neville's insistence that symbols 'break on the infinite'. Specifically, he suspects, for example, that the way in which I am willing to speak about worldly semiosis as a model of the being of God as Trinity fails fully to acknowledge that all finite creaturely speech ultimately breaks down when applied to the infinite transcendent creator.

Let us consider, then, when and how symbols 'break on the infinite'. I suggest that different kinds of sign (I revert to Peircean usage here, in place of Neville's terminology of 'symbol') may 'break' in different ways. First, it is important to note that all creaturely interpretations are fallible, a point to which I shall return in §4.2.1. An aspect of this fallibility is that a sign that may be appropriately taken to mean something in one context may be misinterpreted if it is responded to in the same way in a different context. In that sense I have no disagreement with Shults regarding the fragility of signs. However, there are other ways in which interpretations may 'break'. Consider the word 'God', which is a symbol in the Peircean sense: its relation to its object is given by a convention. Shults would wish to point out, and I would agree, that God is not an object like other objects in the world. Hence, in effect, the Hebrew reticence about uttering the name of God. In that sense the symbol 'God' breaks on the infinite. An indexical sign may similarly break on the infinite. For example, the existence of the world may be taken to point indexically to its creator. Again, I would agree that the creator of the world is, nevertheless, not to be thought of as simply equivalent to a human artificer (a theme to which I shall return in §5.2.3 in the context of the doctrine of creation *ex nihilo*).

Matters are slightly different when we come to consider how icons break, in that (unlike symbols and indexes) there is a sense in which icons break on the finite as much as on the infinite. If I say 'God is my rock' (cf. Ps. 18:2) I am using a metaphor (hence an icon) to describe my relation to God. In doing so I accept that God is in some ways like a rock and in other ways unlike a rock. However, as Sallie McFague puts it, all metaphors contain the whisper, "it is *and it is not*".[52] Importantly, this tension between the 'is' and the 'is not' in the metaphor (icon) is true of most iconic representations, whether the object of the iconic sign is finite or infinite. A portrait is in some

---

[52] Sallie McFague, *Metaphorical Theology: Models of God in Religious Language* (London: SCM Press, 1983), 13.

ways like its subject (the appearance is recognizable as the person it represents) and in others unlike it (the portrait is two-dimensional, the subject three-dimensional). The infinite qualitative difference between creator and creation adds a further way in which icons break on the infinite (equivalent to that noted above with respect to the application of indexes and symbols to the infinite). However, that kind of fragility of icons when used to represent the infinite is in addition to the everyday 'is' and 'is not' aspect of iconic representations.

It is in relation to this issue of the 'is' and 'is not' of iconic representations that the crux of my argument is to be found. According to Peirce's taxonomy of signs, there is a type of icon, the qualisign, that carries only an 'is', without any 'is not'. When a quality is actualized it may act as a sign of that quality. As such, it stands for precisely that quality: it *is* that quality, and it is not unlike it in any respect. That is what I mean when I suggest that to speak of Jesus as the "reflection of God's glory and the exact imprint of God's very being" (Heb. 1:3), in whom "all the fullness of God was pleased to dwell" (Col. 1:19), is to identify Jesus as a qualisign of God. The further sense in which this finite (iconic) qualisign 'breaks' on the infinite because of the absolute difference between finite and infinite is not thereby dissolved: that (the finite) Jesus can be the full embodiment of (the infinite) God's glory is precisely the mystery (in my terms, an aspect of the depth dimension of Christology) that is labelled by the concept of the Incarnation.

3.3   Semiotics and Palaeo-anthropology

3.3.1   Human Distinctiveness and Hierarchical Semiotics

In §3.2.2 I noted Karl Rahner's remark that, "God can reveal only what man is able to hear".[53] If the Incarnation is God's self-revelation in the form of an embodied qualisign of the very quality of God's being, the question arises, what must we say of the kind of creature who would be able to receive – that is, interpret – such a revelation? In the following sections (§§3.3.1–3.3.2) I shall consider this question from the perspective of scientific palaeo-anthropology. In the final sections of this chapter (§§3.4.1–3.4.2) I approach the same question by sketching the outline of a semiotic approach to theological anthropology.

---

[53]   Rahner, *Hearers of the Word*, 115.

It is often said that what sets humans apart from the rest of the animal world is our distinctive capacity for language. Some approaches to semiotics, notably those deriving from Ferdinand de Saussure's 'semiology' regard every kind of sign-use as a sub-variety of language use.[54] In Peirce's semiotics, in contrast, language is seen as a sub-category of more general semiotic processes. In a Peircean perspective we may ask, therefore, what it is about language that makes it such a distinctive and powerful kind of representational system. One might then go on to ask how creatures with a capacity for using this specialized semiotic tool could have evolved from non-linguistic ancestors. Answers to this question would constitute a step towards a semiotic approach to human evolution. Terrence Deacon's *The Symbolic Species* is a seminal work in this regard.[55] Deacon identifies Peircean symbols – signs that are related to their objects by a convention – as the key feature of human language that distinguishes it from other forms of animal communication.[56] According to Deacon, it is the necessarily complex internal referential relationships that obtain between the elements of a symbolic referential system that explains why there are no 'simple languages',[57] and hence why there is such an apparent gulf between human and non-human communicational competence. Deacon speculates that the trigger for the acquisition of symbolic competence may have been a certain socio-ecological situation in which there would be a benefit from possessing some means to mark (symbolize) a 'contractual' arrangement between two individuals, equivalent to a marriage agreement.[58] Of particular interest from the point of view of the thesis I propose in this and the following section is the way in which Deacon's account tends to imply a kind of hierarchy of sign-types. Thus, according to Deacon, the bottom rung of the ladder of semiotic competence involves the use of icons, the acquisition of a capacity to use indexes amounts to a step up the semiotic ladder, and the pinnacle

---

[54] Ferdinand de Saussure, *Course in General Linguistics*, ed. Charles Bally, Albert Sechehay, and Albert Riedlinger, trans. Wade Baskin (London: McGraw-Hill, 1959).

[55] Terrence Deacon, *The Symbolic Species* (Harmondsworth: Penguin, 1997).

[56] Ibid., 69–101.

[57] Ibid., 12.

[58] Ibid., 393–401. Specifically, Deacon argues that such a contract between individuals would be necessary in order for a strategy of cooperative hunting by males to be complemented by a mechanism for ensuring that individual males were able to ensure that their subsequent sharing of food with females would directly benefit their own genetic progeny.

of semiotic capability is constituted by the discovery of the power of Peircean symbols.[59]

The idea that the distinctiveness of human cognition depends on humans having acquired competence in using some sort of hierarchy of semiotic tools comes in various different forms. One example of an implicitly hierarchical scheme is Steven Mithen's account of the evolution of compositional symbolic language from multi-modal, holistic, and largely musical precursors.[60] Another example is Merlin Donald's hierarchical progression from 'episodic' (cf. indexical) to 'mimetic' (cf. iconic) to 'mythic' (cf. symbolic) cultures.[61] Archaeologist Iain Davidson and psychologist William Noble have, likewise, proposed an apparently hierarchical scheme. I focus briefly on their account, not because I believe it to be more plausible than those just mentioned (on the contrary, in certain respects I judge it to be less so), but because its general conceptual structure is a useful model for a possible way of proceeding.

Noble and Davidson's account of human evolution is interesting for my purposes because, like Deacon, they explicitly frame their palaeo-anthropological hypotheses within the framework of Peirce's semiotics. Although Noble and Davidson argue for a much later origin of language than that envisaged by Deacon, they share Deacon's view that the discovery of symbols was the crucial step in the emergence of the uniquely human form of cognition. They suggest that, prior to the emergence of language, human communication took place by means of combinations of indexical gestures (specifically, pointing)

---

[59] Ibid., especially diagram on p. 87. The terminology of a hierarchy or 'ladder' of semiotic competence is my own.

[60] Steven Mithen, *The Singing Neanderthals: The Origins of Music, Language, Mind and Body* (London: Weidenfeld and Nicholson, 2005).

[61] Thus the form of memory labelled by Donald as 'episodic memory', which he suggests is characteristic of apes, *Australopithecines*, and early humans, is arguably a cognitive *index* of past events. Donald's 'mimetic' culture, which he attributes to *Homo erectus* clearly invokes capacities for *iconic* representation. Finally, Donald's 'mythic' culture, characteristic of modern humans, especially from the Upper Palaeo-lithic onwards, was 'enabled and triggered' by a newly developed capacity for 'symbolic invention'. (Merlin Donald, *Origins of the Modern Mind: Three Stages in the Evolution of Culture and Cognition*, Cambridge: Harvard University Press, 1991, 268). Interestingly, from the point of view of the hypothesis I develop below, Donald attaches some importance to the emergence of 'visuo-graphic invention' (275) and suggests that "pictorial invention might have signalled the start of a new cognitive structure", though he does not think that visuo-graphic invention had major effects on human cognition until after the invention of writing (285).

and iconic gestures (such as tracing out the shape of the predator or prey animal to which the pointing gesture referred).[62] They further speculate that perhaps such iconic gestures could occasionally have been made in such a way as to accidentally leave a trace of the gesture, perhaps in a muddy bank.[63] The physical trace of the gesture might then be noticed, and its resemblance – in some respect – to a feature of the animal in question could, they suggest, give rise to an awareness that the trace (and the gesture that produced it) are in some way representations of the animal. The key step, according to Noble and Davidson, would then have been a reorientation *away* from the object, such that it became possible to recognize the existence of the sign (the gesture or its mud-trace) as a 'signifier':

> Howsoever that is accomplished, once done, the sign becomes usable symbolically. Its form, initially iconic, could be reduced or otherwise modified and have increasingly arbitrary formal relation with its referent.[64]

Having emphasized the importance of "the arbitrariness which characterises referential signs", Noble and Davidson go on to ask whether there are any other kinds of referential sign apart from symbols.[65] They answer: "We do not believe there are other kinds so much as that symbols come to be used for different purposes than the achievement of everyday reference". In other words, everything that is distinctive about modern human behaviour and culture derives from the various uses to which signs with arbitrary reference (Peircean symbols) can be put. (In their view, religious symbols are a mistaken extension of the use of arbitrary referential signs.) Noble and Davidson do acknowledge that humans can use the type of sign that Peirce terms an icon, but the referential function of such icons depends, they suggest, on support from a superstructure of symbolic competence.[66]

Of course, identifying the bias towards 'hierarchical' understandings of the distinctive nature of human semiotics shared by these various

---

[62] William Noble and Iain Davidson, *Human Evolution, Language and Mind: A Psychological and Archaeological Enquiry* (Cambridge: Cambridge University Press, 1996), 218–21.

[63] Ibid., 223.

[64] Ibid., 224.

[65] Ibid., 66–67.

[66] Ibid., 80; see also Iain Davidson, "The Power of Pictures," in *Beyond Art: Pleistocene Image and Symbol*, ed. Margaret W. Conkey, et al. (San Francisco: California Academy of Sciences, 1997), 153.

accounts glosses over the major differences between them. Furthermore, it risks doing them the injustice of reducing their distinctive contributions to the study of human evolution to a single focus of conceptual analysis and thereby distorting the nuances and subtleties of each of their approaches. Nevertheless, I suggest that it is helpful to draw attention to this general tendency to favour a 'hierarchical progression' model of the evolution of semiotic capabilities. At risk of oversimplification, then, I suggest that the three main assumptions behind hierarchical approaches to human semiotic competence are the ideas that:

> 1. The evolution of human semiotic capability moves, in some sense, from the use of simple to more complex or more sophisticated signs;
> 2. The culmination of this process is the acquisition of a capacity for using symbols (in the Peircean sense of signs related to their objects by convention);
> 3. Once this capability has been acquired, further developments in human evolution may follow from the possibility of using symbols in novel ways but they do not depend on any further qualitative steps in the kinds of sign-use available.

I wish to question whether a capacity for using symbols (in the Peircean sense) is, in itself, sufficient fully to account for human distinctiveness in the way implied by hierarchical models of the evolution of semiotic competence. Consideration of the importance of various kinds of *iconic sign* to human cognition may suggest otherwise. An icon, according to Peirce's taxonomy of signs, is a sign whose relation to its object is one of resemblance (§1.3.2). In the case of a portrait, the picture is an icon by virtue of being an *image* of its subject. However, not all iconic signs are images. Diagrams and metaphors are kinds of iconic sign that are not simple images of their objects.[67] Thus a circuit diagram, for example, iconically conveys the relationships between the various components in an electronic device by virtue of representing their topological relations to one another. Importantly, without some (conceptual, symbolic) knowledge of the relevant principles of physics, electronics, together with competence in the use of various symbols that represent certain components by convention, the topological diagram would be worthless. Nevertheless, the diagram may well convey something about the construction of the device which would be

---

[67] Short, *Peirce's Theory of Signs*, 218.

difficult or impossible to grasp by means merely of symbols: the dia-
gram must abstract from the messy details of actual wiring and sol-
dering to show which components connect to which others. Similarly,
a metaphor is a verbal picture in which the object is represented by
drawing attention to a likeness, in some respect, to some otherwise
unrelated entity or event. Metaphors could not be constructed without
the use of symbolic language, but they are capable of conveying new
meanings that would otherwise be inaccessible.

We may therefore regard images, diagrams and metaphors as three
ways in which the conceptual superstructure provided by symbolic
conventions can support new, previously impossible, representations
in iconic form. The new possibilities and connections, similarities and
differences, that are opened up by these new iconic representations
are in turn able to enrich and advance the symbolic superstructure in
which they are embedded. Consider, for example, the famous example
of Kekulé's recollection of how he formed the hypothesis of the ring-
structure of benzene.[68] Framing Kekulé's account in Peircean terms, he
had been picturing the chemical symbols for carbon atoms arranged
(diagrammatically – i.e., *iconically*) as chains. He then found himself
imagining the chain of carbon atoms in the form of another icon, that
of a snake. This new icon invited a manipulation of the image such
that the snake was seen to be eating its own tail. The juxtaposition
of this iconic image with the symbolically mediated conceptual prob-
lem of the structure of benzene gave rise to Kekulé's insight into the
possibility of the occurrence of carbon rings. The cognitive trick of
transposing one way of thinking about the problem (chains of carbon
atoms) into another (iconic) representation (a snake of carbon atoms
with a head and tail) granted Kekulé a new way of imagining the pos-
sibilities, with the eventual result of opening up a whole new field of
organic chemistry. Another example is Darwin's famous sketches of
evolutionary 'trees' in his *First Notebook on Transmutation*.[69] In one
of these, branches representing different species are labelled with sym-
bols A to D, the closeness of the evolutionary relationship between the

---

[68] Walter Gratzer, *Eurekas and Euphorias: The Oxford Book of Scientific Anecdotes*
(Oxford: Oxford University Press, 2004), 14.

[69] Charles Darwin, "Darwin's Notebooks on Transmutation of Species, Part I. First
Notebook (July 1837–February 1838), Edited with an Introduction and Notes by Sir
Gavin De Beer," *Bulletin of the British Museum (Natural History)* 2, no. 2 (1960).
Available on line at http://darwin-online.org.uk/pdf/1960_Notebooks_F1574a.pdf.
Accessed 30 March 2010.

species being represented by the length of the branches.[70] Interestingly, above this diagram Darwin wrote, "I think…". His revolutionary new thought seems, therefore, to have required elements of symbolic *and* iconic semiotic competence. Moreover, the power of the combination of symbols and icons in these examples depends not only on a general ability to use both of these kinds of sign, but in a capacity to creatively juxtapose them in such a way as to reach a conclusion that would have been beyond reach in the absence of such a capability.

Of course, the kind of idea outlined above is not new. It is often noted, for example, that scientific advances frequently appear to involve acts of imagination as much as of reason. In theology and religion the importance of imagination and the place of metaphorical expression of ideas has, likewise, been recently emphasized.[71] What is not so often recognized is that an emphasis on the cognitive importance of imagination can be given a much greater degree of conceptual clarity in the light of Peirce's taxonomy of signs. Furthermore, I am not aware that learning how to *combine* different sign types (as opposed merely to learning to use, say, symbols) has previously been suggested as crucial to understanding human evolution. In the following section I shall set out a proposal for the application of such an approach to the question of how and when distinctively modern modes of human behaviour and cognition evolved. If there is any merit in my proposal then, at its most basic, it might be said to rest on a simple clarification of the term 'symbol'.

A recurring problem in discussions of human evolution, I suggest, is that the term 'symbol' and its cognates can be used in two different senses. On the one hand, 'symbolic' can refer generally to the kinds of semiotic competence that are unique to humans. On the other hand, 'symbol' can refer specifically to the kind of Peircean sign whose relation to its object is given by a rule or convention. A problem arises when these specific and general (technical and non-technical) meanings are conflated. In that case, the general sense in which modern human cognition is 'symbolic' (where 'symbolic' is nothing more than a label for the distinctiveness of human cognition) can easily be mis-

---

[70] Ibid.: 46 (Fig. 3). Though this is the most commonly reproduced figure from the notebook, Darwin's references to the "tree of life" occur in relation to the two earlier (and even more tree-like) diagrams (Figures 1 and 2, p. 44).

[71] For example, Paul Avis, *God and the Creative Imagination: Metaphor, Symbol and Myth in Religion and Theology* (London and New York: Routledge, 1999); David Brown, *God and Mystery in Words: Experience through Metaphor and Drama* (Oxford: Oxford University Press, 2008).

taken for a causal claim about the basis of human distinctiveness. In effect, an inference is made of the form: 'human cognition is symbolic; symbols are a kind of sign in which the sign-object relation is given by a convention; therefore human distinctiveness rests on competence in using arbitrary signs'. The fallacy here arises from the fact that the term 'symbolic' in the first premiss of the argument is being used in a general, non-Peircean, sense, whereas in the second premiss the term 'symbol' is being used in a specific Peircean way. Labelling the distinctiveness of human culture and cognition with the (general) word 'symbolic' is hazardous if we slide uncritically to conclude that human distinctiveness rests exclusively on the use of (Peircean) symbols.

In the following section, then, I propose that human distinctiveness may have emerged, not merely through the ascent of a hierarchy of semiotic competence, of which symbolic competence (in the Peircean sense) was the pinnacle, but, rather, through entering what I shall refer to as the 'semiotic matrix'. On this view, the ultimate threshold in human evolution was, I shall suggest, the acquisition of competence in creatively combining different kinds of sign, particularly the emergence of a capacity to combine symbols with various kinds of icon.

3.3.2   *Human Evolution and the Semiotic Matrix*

I turn, then, to consider how Peirce's taxonomy of signs may shed light on the major transitions in human evolution. Table 3 summarizes a speculative timescale for the evolution of human semiotic competence. This timescale is, of course, entirely hypothetical; nevertheless, it illustrates how my conceptual scheme might plausibly connect with the actual archaeological record.

It seems reasonable to suppose that our earliest hominid ancestors, the *Australopthecines*, used gestures as their primary mode of communication with one another. This idea is supported by the fact that apes use some gestural communication in the wild and can be taught to use and interpret more sophisticated gestures.[72] Noble and Davidson's hypotheses about the uses to which such gestures could have been put, such as locating and specifying prey species, seem plausible. I agree, also, that the addition of symbolic signs to these iconic and indexical gestures would have been an important development, though I

---

[72]   Michael Tomasello, *Origins of Human Communication* (Cambridge: MIT Press, 2008), 11–55.

Table 3: Hypothetical timescale of human semiotic evolution

Early hominids (*Australopithecines*)	4.5–2 million years ago (mya)	Partial legisign competence: Iconic and indexical legisigns
Early humans (*Homo habilis, Homo ergaster*)	2–1 mya	Full legisign competence: Iconic, indexical and symbolic legisigns
Homo erectus, Homo heidelbergensis	1.2–0.5 mya	Increasing use of *vocal* symbols
Homo sapiens (and *Homo neanderthalensis*?)	0.2 mya	Fully articulate speech; some residual iconic, indexical and symbolic gestures
Upper Palaeolithic revolution (and earlier precursors)	<0.1 mya	Creative dialectic between symbols and icons

place this development much earlier in human history than do Noble and Davidson. Like Deacon, I think it plausible to suggest that the 'discovery' of symbols might correspond to the emergence of the first humans, represented in the fossil record by *Homo habilis* and *Homo ergaster*.[73] Furthermore, unlike Noble and Davidson, I do not regard it as necessary to hold that this discovery required some kind of 'eureka' moment, represented in their narrative by the role of the mud-trace of an iconic gesture. Rather, I suggest that symbols could have developed as stereotypical abbreviations of gestures that originally held iconic references to their objects. For example, an iconic gesture for a bison, consisting perhaps of a sweep of a hand tracing the distinctive shape of a bison's back, could have been gradually reduced to a brief positioning of the hand in a distinctive shape with a progressively more arbitrary relation to the form of a bison.[74]

---

[73] Deacon's view is that the emergence of symbol-use is marked by the *Australopithecus-Homo* transition approximately 2 million years ago (Deacon, *Symbolic Species*, 348ff). Noble and Davidson's view is that symbolic communication arose much later, between 100 000 to 70 000 years ago (Noble and Davidson, *Human Evolution*, 217).

[74] It is interesting that the development of communicative pointing develops in human infants at around 12 months of age, before the emergence of language. Communicative pointing persists after the appearance of, and tends to supplement, subsequent linguistic competence, whereas iconic gestures ('pantomiming') diminish in importance after the acquisition of language. Tomasello, *Origins of Human Communication*, 109–67.

The use of some symbolic gestures to supplement existing iconic and indexical gestures would have been advantageous in that the symbolic elements could have been more rapidly produced and more flexibly combined than their iconic and indexical counterparts. It seems unnecessary to suppose, however, that the discovery of symbols would have led to a rapid decline in the importance of iconic and indexical gestures.[75] A consequence of this analysis, therefore, is that it relativizes the importance of the discovery of symbols. According to this view, the emergence of symbolic gestures from iconic precursors did not constitute the crossing of a major semiotic threshold, as hierarchical accounts of semiotic competence tend to imply. Rather, it amounted to the gradual completion of a trajectory of legisign competence which had begun with the use of indexical and iconic legisigns by our *Australopithecine* ancestors.[76] This perspective is reflected in the right hand column of Table 3, where I distinguish between 'partial' legisign competence (the use of iconic and indexical legisigns by the *Austalopithecines*) and 'full' legisign competence (the addition of gestural symbols by, say, *Homo habilis* and *Homo ergaster*).

The trajectory of increasingly sophisticated legisign competence would, according to my proposed timescale, have come to fruition with *Homo erectus* who, I suggest, would have made increasing use of vocal symbols to replace the gestural symbols of their *habilis* and *ergaster* predecessors. In terms of the range of sign-types in use this would not represent any expansion over the basic human repertoire of legisign competence. The difference would have been the greater speed of production, and wider range of possible symbols, made possible by symbolic vocalisation. Whereas the earliest human species might have begun to supplement their iconic, indexical and symbolic gestures with some supporting symbolic vocalisations, I speculate that *Homo erectus* came increasingly to use vocal symbols, supplementing these with gestures. Earlier human species had employed a limited range of cultural skills and never expanded beyond a quite restricted geographical range

---

[75] Tomasello suggests a more complex account of how iconic gestures might have 'drifted' towards more arbitrary forms of signification. As with the account I am proposing, he does not think it would have been necessary (or indeed possible) for humans to 'invent' symbolic communication *de novo*. Ibid., 220–225.

[76] Recall that legisigns are the type of sign-vehicle reproduced according to a rule for the purpose of signifying (§3.1.2).

in Africa. In contrast, our *Homo erectus* ancestors developed complex methods of tool manufacture, cooperated in seasonal hunting, learned how to use fire and to cook, and migrated widely into the Eurasian landmass.[77] I hypothesize that the semiotic capability underlying their remarkable longevity as a species (by comparison with other human species so far), and their wide geographical distribution, was not the discovery of symbols as such – that discovery had been made by the earliest humans – but the exploitation of the utility of symbolic communication to its full potential in the form of the increasing dominance of vocal symbols over symbolic gestures.

Communication systems based primarily on gestural or vocal symbols would have required a well developed capacity for learning in childhood in order for individuals to become competent in the use of even a relatively small number of symbolic conventions. The emergence of such capabilities implies a significant amount of brain evolution. It should not be surprising, therefore, if the phases of human evolution characterized by the development of full legisign competence (the earliest humans) and its exploitation in the form of predominantly symbolic vocal communication (*Homo erectus*) took a long time to develop and to be consolidated. The terminus of the trajectory of the development and exploitation of legisign competence, I suggest, is marked by the appearance of anatomically modern humans. Again, this coheres with Deacon's view that the achievement of fully articulate speech corresponds to the appearance of anatomically modern *Homo sapiens* at around 100 000–200 000 years ago.[78] One argument in favour of this timescale is that certain features of the base of the skull correlate with the relatively descended larynx and extended supralaryngeal vocal tract that is characteristic of humans and contributes to our capacity for rapid versatile articulation.[79] Although the evidence is indirect, the presence of such basicranial features in the earliest anatomically modern humans suggests that the human larynx had already been subject to strong selection pressure for the production of articulate speech. A more recent piece of evidence comes from the finding that the *FOXP2* gene, disruptions to which cause specific

---

[77] Donald, *Origins of the Modern Mind*, 163–64.
[78] Deacon, *Symbolic Species*, 364.
[79] Donald, *Origins of the Modern Mind*, 101–03.

deficits in speech articulation, became fixed in human populations no more than 150 000 years ago.[80]

If the first anatomically modern humans did indeed possess a highly developed capacity for (vocal) symbol use, a key question is whether everything that is distinctive about human cognition and behaviour followed directly from attaining this level of symbolic competence, as Deacon and others in effect maintain?[81] Alternatively, was there a further qualitative step in semiotic competence that was yet to be taken, a semiotic threshold not yet crossed?

Current evidence still seems to support the idea that there was a delay between the appearance of modern human anatomy and the Upper Palaeolithic cultural explosion associated with the appearance of cave art, body decoration, increased tool diversity and elaborate ritual. Recent finds have perhaps narrowed this gap, but it remains one of the mysteries of human evolution that 'artistic' and 'religious' behaviours should appear relatively suddenly in the archaeological record some time after the appearance of anatomically modern humans.[82] The importance of the so-called Upper Palaeolithic 'revolution' for the interdisciplinary study of human 'uniqueness' is amply illustrated in J. Wentzel van Huyssteen's recent Gifford Lectures.[83] Van Huyssteen is cautious about drawing firm conclusions about the explanation for the apparent sudden flourishing of human 'symbolic', 'religious', and 'imaginative' behaviour in this period, emphasizing that the emergence of these behaviours might reflect a shift in behavioural *performance* rather than the evolution of new biological *capacities*.[84] Nevertheless, van Huyssteen's own work provides a compelling case for regarding the developments that took place in – or at least are reflected in the archaeological evidence from – the Upper Palaeoli-

---

[80] Wolfgang Enard et al., "Molecular Evolution of *FOXP2*, a Gene Involved in Speech and Language," *Nature* 418 (2002).

[81] Deacon, for example, attributes the Upper Palaeolithic cultural revolution to changes in climate, ecology and related changes in human behaviour rather than to any new 'symbolic' capabilities. Deacon, *Symbolic Species*, 373–374.

[82] See, for example, ibid., 370.

[83] J. Wentzel van Huyssteen, *Alone in the World?: Human Uniqueness in Science and Theology* (Grand Rapids/Cambridge: William B. Eerdmans, 2006).

[84] Ibid., 167–69. See Olga Soffer and Margaret W. Conkey, "Studying Ancient Visual Cultures," in *Beyond Art: Pleistocene Image and Symbol*, ed. Margaret W. Conkey, et al. (San Francisco: California Academy of Sciences, 1997), 5.

thic, as being of crucial significance for bringing together scientific and theological understandings of what it is to be human.[85]

Like van Huyssteen, I am willing to remain agnostic on the question of whether the Upper Palaeolithic 'revolution' involved a cultural expression of an existing biological potential, or whether some specific neurobiological change occurred that was sufficient to give rise to a new range of human capabilities without having left any evidence of morphological change in the human fossil record. I am persuaded, however, that, in the Upper Palaeolithic in Europe, and probably earlier in Africa, anatomically modern humans crossed a new cognitive threshold. My hypothesis, in short, is that the threshold that was crossed was a threshold of semiotic competence; specifically, the 'discovery' of how to combine symbolic forms of communication with iconic representation in a new kind of creative 'dialectic'. This process would include the new kinds of knowledge made available through the use of diagrams and metaphors discussed in the previous section (§3.3.1).[86]

What might have prompted modern humans to cross this threshold? My playful hypothesis is that perhaps Palaeolithic *doodling* may have played a key role. Bipedalism had originally freed up our arms and hands, giving rise to increased opportunities for communication by gestures which were exploited by our *Australopithecine* ancestors. Our hands were then occupied with communication rather than locomotion. With the development of fully articulate speech, emerging with *Homo erectus* and coming to fruition with *Homo sapiens*, our upper limbs once again became relatively free. Perhaps anatomically modern humans now began to use this freedom to trace out lines, shapes and iconic images in whatever medium (mud, sand, rock) presented itself. Some of these material images may well have been made for the purpose of iconically representing an object. Once such skills had been learned, however, absent-minded doodling would have been

---

[85] van Huyssteen, *Alone in the World?: Human Uniqueness in Science and Theology*, especially Chapter 4.

[86] Peirce's own thinking implied such a dialectic, particularly in his concepts of hypostatic abstraction (the process by which new concepts become 'hypostasized' – that is, new symbols are formed) and diagrammatic reasoning (the process by which new types of reasoning become possible by formulating a problem within a new representational system). Michael H. G. Hoffmann, "Seeing Problems, Seeing Solutions. Abduction and Diagrammatic Reasoning in a Theory of Scientific Discovery," Georgia Institute of Technology, http://hdl.handle.net/1853/24031.

possible. The resulting doodles would not have been accidental (unlike Noble and Davidson's mud-trace hypothesis), but neither would they have necessarily been made with a clear communicative purpose in mind. The important point is that the opportunity to make visual marks whilst speaking or listening (whether to someone else or to one-self) would have given rise to a new cognitive phenomenon, namely, the association of symbolic communication with ostensibly unrelated iconic representations. These doodled icons would not be iconic legi-signs because they would not necessarily be drawn according to any particular rules for their reproduction as signs. Rather, they would be iconic sinsigns – singular occurrences with a *capacity* to represent iconically.[87] In this regard it is interesting to note the prevalence of abstract geometric forms in Palaeolithic cave art, some of which may be spatial representations of concepts or events.[88]

The cognitive breakthrough which the co-occurrence of symbol-mediated discourse and iconic sinsigns had the capacity to generate was, in effect, that of reasoning by means of the use of diagrams. When Christopher Henshilwood published evidence of 77 000 year old ochre engravings in Blombos Cave in South Africa, French cave-art expert Jean Clottes dismissed the South African finds as possibly being 'doo-dles' rather than instances of symbolic behaviour.[89] Henshilwood sub-sequently rejected this suggestion, probably rightly. Nevertheless, it is interesting that both apparently assumed that the discovery of doodles would be less interesting than the discovery of 'symbolic' art. I suggest, in contrast, that the earliest doodles might be of great significance for understanding the evolution of human cognition. My 'doodling theory' of modern human origins is both playful and serious. It is playful in the sense that it is highly speculative and may well be wrong. It is seri-ous in that, like Noble and Davidson's mud-trace hypothesis, it serves the purpose of illustrating how the theoretical framework of Peirce's semiotics could, in principle, suggest novel approaches to empirical scientific questions about human origins.[90]

---

[87] Iconic representation should be understood very broadly here – recall that images, diagrams and metaphors are all varieties of icon.

[88] Steven Mithen, *The Prehistory of the Mind: A Search for the Origins of Art, Religion and Science* (London: Thames and Hudson, 1996), 158.

[89] Michael Balter, "From a Modern Human's Brow – or Doodling?," *Science* 295 (2002).

[90] cf. Noble and Davidson, *Human Evolution*, 220.
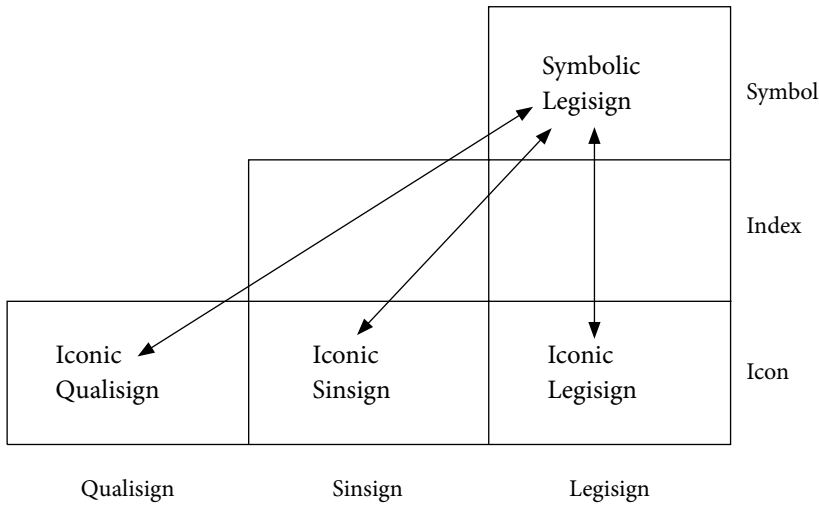
Figure 1: The Semiotic Matrix

Once the cognitive threshold constituted by the technique of diagrammatic reasoning had been crossed the way would be open for other forms of human cognition and creativity that depend on combining symbols with icons. This is illustrated in Figure 1, in which sign-object relations are represented in the vertical axis and types of sign-vehicle along the horizontal axis. The diagram emphasizes the way in which, according to the model I am proposing, symbolic competence is not the pinnacle of human semiotic capability. Rather, once symbolic competence is mastered, possibilities arise for a generative dialectic of symbolic and iconic representations. Because the picture is now one of a two-dimensional array of sign-types, rather than a linear hierarchy with symbols at the top, I call the semiotic realm that modern humans inhabit the 'semiotic matrix'.

The middle arrow in the diagram connects symbols with iconic sinsigns. This connection includes instances of diagrammatic reasoning which, as suggested above, may have been our entry point into the dialectical semiotic matrix. The left hand arrow connects symbols with qualisigns. The intentional production of qualisigns is characteristic of the distinctively human activity of artistic creativity. Some (but certainly not all) Palaeolithic so-called 'cave art' may have been produced

with what we would now refer to as 'artistic' intentions.[91] Art, like diagrammatic reasoning, gives us access to new kinds of understanding. Arguably, art occurs within a context of symbolic discourse about the world and, though not merely a re-expression of such discourse is, nevertheless, in some sense dependent upon it. As T. L. Short points out,

> The fine arts may exploit linguistic or other culturally instituted rules, but works of art do not signify by rule; it might be argued that it is their essence not to signify by rule, but to make us apprehend things in new ways.[92]

The right hand arrow in the diagram links symbols to iconic legisigns. As already mentioned in §3.1.2, certain kinds of ritual, including the Christian Eucharist, may be understood as iconic signs (bearing a resemblance of some kind to the object or concept signified) that meet the requirements of a legisign (that is, being reproduced according to a rule for the purpose of signifying). Perhaps the same could be said of some forms of Palaeolithic ritual. An example is the ritual that may have given rise to the negative handprints found at a number of Palaeolithic sites. David Lewis-Williams has suggested that these striking images were produced as part of a ritual in which placing the palm of one's hand on the cave wall was understood by the participants to be a way of making contact with a world beyond the visible realm.[93] I do not wish to imply that, prior to entry into the 'semiotic matrix', there were no human rituals, celebrations, dances, and so on. Rather, I suggest that the function and cognitive significance of such activities would have been very different after the threshold represented by the semiotic matrix had been crossed.

The key ideas behind the idea of the semiotic matrix, then, in contrast to the assumptions identified above as characterizing approaches based on the idea of a semiotic hierarchy, are that:

---

[91] It is notoriously difficult to define the essence of 'art', and particularly difficult to reconstruct the intentions of Palaeolithic image-makers (David Lewis-Williams, *The Mind in the Cave: Consciousness and the Origins of Art*, London: Thames and Hudson, 2002, 42–45). My argument does not depend on attributing specific motives to the creators of so-called 'cave-art'. Nevertheless, I think it reasonable to respond to some of the examples of Palaeolithic image-making by supposing that their creators had learned something about how to depict something of the holistic 'quality' of their subject matter.

[92] Short, *Peirce's Theory of Signs*, 310.

[93] Lewis-Williams, *The Mind in the Cave*, 217–18.

1. The evolution of human semiotic capability consists less in a movement from the use of simple to more complex or more sophisticated signs than in a development of the capacity to combine various sign types in new ways;

2. The culmination of this process (so far) is not the acquisition of a capacity for using Peircean symbols but the discovery of the possibilities opened up by dialectically combining symbols (especially symbolic legisigns) with icons (initially iconic sinsigns, subsequently iconic qualisigns and iconic legisigns);

3. The emergence of fully modern behaviour and cognition, such as represented by the Upper Palaeolithic revolution, may have been the result of this kind of qualitative shift in semiotic capability beyond the discovery of conventional symbols.

My overall thesis could be regarded as combining Deacon's appropriation of the logic of Peirce's semiotics with Stephen Mithen's concept of 'cognitive fluidity'.[94] According to Mithen, this 'fluidity' arose when the possibility of a flow of symbols between different modules (for example, the modules associated with technical, linguistic, social, and natural history intelligence) enabled these modules to enter into communication with each other.[95] Where Mithen proposes connections between various cognitive modules, I envisage connections between different sign-types.[96] Another concept with which my hypothesis has similarities is Gilles Fauconnier and Mark Turner's notion of 'conceptual blending'.[97] However, Fauconnier and Turner do not develop their idea in terms of semiotic concepts, and the 'blending' process that they have in mind is not inherently asymmetrical (in a way analogous to the role of the combination of symbols and icons in my proposal).[98] Fauconnier and Turner identify, as a forerunner of their ideas, Arthur Koestler's idea that various kinds of creativity involve a "bisociation

---

[94] Mithen, *Prehistory of the Mind*, 70.

[95] Ibid., Chapter 4, also Mithen, *Singing Neanderthals*, 264.

[96] Perhaps my hypothesis might be thought of in terms of a notion of 'semiotic fluidity'. I prefer the idea of a semiotic 'dialectic', however, because the term 'dialectic' better captures the sense in which, according to the matrix hypothesis, the interplay between different sign-types leads to a qualitatively new kind of cognition.

[97] Giles Fauconnier and Mark Turner, *The Way We Think: Conceptual Blending and the Mind's Hidden Complexities* (New York: Basic Books, 2002). For a related approach, also with roots in cognitive science, see George Lakoff and Mark Johnson, *Metaphors We Live By* (Chicago: University of Chicago Press, 1980).

[98] Fauconnier and Turner propose that language, which they regard as having originated around the time of the Upper Palaeolithic revolution, is dependent upon a particular kind of conceptual blending (double-scope blending): *The Way We Think*, 182.

of matrices", a phrase that has both conceptual and terminological resonances with my hypothesis of the 'semiotic matrix'.[99]

My hypothesis is agnostic on detailed questions about the functional and anatomical 'modularity' of the mind,[100] and it does not presuppose any particular neurophysiological or neuroanatomical basis for the production and interpretation of the various types of sign in Peirce's taxonomy. Nevertheless, I suspect that high levels of symbolic competence are likely to require proficiency in tasks involving sequencing and combining discrete elements, whereas diagrammatic reasoning might be associated predominantly with visual processing tasks. It might therefore be expected, according to my hypothesis, that these two different kinds of task would be functionally (and perhaps anatomically) separable to some degree, and there is some empirical evidence that supports this prediction.[101] In terms of the normal working of the intact modern human mind, however, it may be quite difficult to isolate the kinds of cognition that would have been characteristic of our fully articulate ancestors before humans had crossed the further qualitative semiotic threshold that I propose. It would be difficult, in other words, for us to imagine what it would be like to be an articulate human *without* a tendency to think diagrammatically or metaphorically.[102] Therein lies, I suspect, some of the difficulty in seeing quite how special is the cognitive niche that we now occupy, namely, the niche of the dialectical semiotic matrix.

---

[99] Fauconnier and Turner, *The Way We Think*, 37; Arthur Koestler, *The Act of Creation* (New York: Mcmillan, 1964). Koestler's idea is discussed in Terrence Deacon, "The Aesthetic Faculty," in *The Artful Mind: Cognitive Science and the Riddle of Human Creativity*, ed. Mark Turner (Oxford: Oxford University Press, 2006), a volume that contains several other contributions of relevance to my thesis.

[100] Jerry A. Fodor, *The Modularity of Mind* (Cambridge: MIT Press, 1983).

[101] Very broadly, a standard, though perhaps questionable, position in neuropsychology takes verbal or propositional thought to be localized in the left cerebral hemisphere and visual-synthetic processing to be localized on the right. Donald, *Origins of the Modern Mind*, 63. Even if this turns out to be an over-simplification, there is good evidence that verbal and visual-spatial skills can be dissociated in psychometric testing (ibid., 74). According to my hypothesis, modern human symbolic competence would originally have been manifested primarily in a capacity for verbal articulation and iconic creativity primarily with visual forms of representation. This is not to suggest that Peirce's semiotics requires that symbols must be verbal or that icons must be visual.

[102] Indeed, Fauconnier and Turner suggest, in relation to their not dissimilar notion of conceptual blending, that the mind has evolved in a way that reflects an adaptive advantage to *not* being able to subject fundamental cognitive mechanisms to introspective scrutiny (*The Way We Think*, 18).

I began these speculations about the semiotic basis of human evolution by reflecting, at the beginning of the previous section, on Karl Rahner's remark that, "God can reveal only what man is able to hear".[103] I asked there, if the Incarnation is God's self-revelation in the form of an embodied qualisign of the very quality of God's being, what kind of creature would be able to receive – that is, interpret – such a revelation? I now suggest that one answer to this question is that such a creature must have a capacity for interpreting iconic signs in the context of, and in creative dialectic with, symbolic modes of discourse. In short, the 'hearers of the Word' must be creatures who have entered the semiotic matrix. In the final two sections of this chapter I shall take my hypotheses about the basis of human evolution as the starting point for the formulation of a semiotic approach to theological anthropology.

3.4   *Semiotics and Theological Anthropology*

3.4.1   *Self-Transcendence and the Gift of Abduction*

One way of approaching the task of developing a semiotic theological anthropology is to ask how humanly constructed signs and interpretations are able to connect up with, or match up to, a transcendent reality. The Greek word *sumbolon* originally referred to the two halves of a broken coin or piece of pottery that functioned to confirm the identity of a guest or ally.[104] On the assumptions about symbols that characterize the understanding of human semiotic capabilities in terms of a hierarchical progression (§3.3.1), the theological hope would be for the existence of a special 'fit' between our religious signs and symbols and the reality they are supposed to represent. If we think of the hierarchy of signs as a semiotic ladder then the hope, according to this way of thinking about religious symbols, is that at the top of the ladder our religious symbols are, so to speak, able to reach heaven (cf. Gen. 28:12). Noble and Davidson, whose ideas about the semiotic

---

[103] Rahner, *Hearers of the Word*, 115.

[104] This idea of the symbol as a token of friendship may be the reason why early Christianity referred to the creeds as symbols – shared tokens of a common faith. David Brown, "Symbolism," in *The Oxford Companion to Christian Thought*, ed. Adrian Hastings, Alistair Mason, and Hugh Pyper (Oxford: Oxford University Press, 2000).

basis of human evolution I discussed in §3.3.1, believe this hope to be in vain – religious symbols, they suggest, are a mistaken form of semiotic usage.[105] In contrast, Karl Rahner's 'ontology of the symbol' (§3.2.2) rests on the idea that certain special symbols – pre-eminently the Incarnation of the Word – have an intrinsic connection with that which they signify.[106] However, as I argued there, Rahner's metaphysic disconnects such 'real symbols' from everyday signification and thereby prevents his theology of the symbol from making fruitful connections with scientific anthropology.

Robert Neville has developed an explicitly Peircean theological anthropology that he refers to as a theology of "symbolic engagement".[107] Neville emphasizes the "complexity" of religious symbols, and his account of the importance of this complexity marks an instructive difference between our respective approaches to the semiotic basis of theological anthropology. For example, in Neville's analysis of nine "layers of meaning" in the symbol of the Eucharist, he repeatedly refers to the complexity of the "layers" and "networks" of reference involved.[108] It is vital to acknowledge this complexity, Neville argues, because it enables us to recognize when a religious symbol has become dead or dangerous.[109] An aspect of the complexity of religious symbols, according to Neville, is that the layers or systems of symbolic meaning "impact one another to correct and shift the symbolic frame".[110] An advantage of this account is that it enables Neville to offer a framework for the criticism and revision of the use of particular symbols within a given religious tradition, and for dialogue between traditions.[111] However, I suggest that an emphasis on the 'complexity' of religious symbols obscures important aspects of the semiotic basis of an adequate theological anthropology. This is clear in Neville's insistence that all religious symbols "break on the infinite" (see above, §3.2.3).[112] Accord-

---

[105] Noble and Davidson, *Human Evolution*, 68.

[106] Rahner, *Theological Investigations Volume 4*, 221–52.

[107] Robert Cummings Neville, *On the Scope and Truth of Theology: Theology as Symbolic Engagement* (New York: T&T Clark, 2006).

[108] Robert Cummings Neville, *The Truth of Broken Symbols* (New York: State University of New York Press, 1996), 77–78, 102.

[109] Ibid., 222–24. For example, he suggests that such is the case with symbols of atonement that depend on the concept of sacrifice.

[110] Ibid., 193.

[111] Robert Cummings Neville, *Symbols of Jesus: A Christology of Symbolic Engagement* (Cambridge: Cambridge University Press, 2001), 171–80.

[112] Neville, *Broken Symbols*, Chapter 2.

ing to Neville, religious symbols are distinguished from other symbols by pointing to finite/infinite contrasts and boundaries.[113] Because of the nature of such boundaries all religious symbols are "limited", "broken", or even plain "wrong".[114]

I do not wish to deny that religious representations can be dead or idolatrous,[115] or that, in practice, rituals such as the Eucharist have multiple potential references. However, Neville assumes *a priori* that 'symbols' cannot bridge the divide between the finite and the infinite. Earlier in this chapter (§3.2.3) I responded to a criticism, made from the perspective of Neville's insistence that symbols break on the infinite, to the effect that the idea of the Incarnation as an iconic quali-sign of God fails to recognize adequately the limitations of creaturely capabilities of signification. I simply add here that, from the point of view of Christian theology, an affirmation that Jesus was the incarnate Word of God surely challenges the assumption that the world is only capable of holding broken and inadequate 'symbols' of the infinite. When Philip asks Jesus to show the disciples the Father, Jesus replies: "Have I been with you all this time, Philip, and you still do not know me? Whoever has seen me has seen the Father" (John 14:8–9). In terms of the depth dimension of Christology (§3.2.1), the question hinges not, ultimately, on an analysis of the reliability of finite 'symbols' when taken to refer to the infinite but, rather, on whether or not one takes the created order to be (by God's grace) potentially the fabric of a true revelation of God.

My account therefore differs from Neville's in holding, first, that the God-given semiotic structures of knowledge do permit finite signs to represent truthfully that which lies beyond the finite without 'breaking'. Second, in contrast to Neville's emphasis on complexity, the concept of the semiotic matrix suggests a sense in which the signs and interpretations that connect finite creatures with the infinite are examples of the simplest – rather than the most complex – kinds of semiotic occurrence. That is, they involve the interpretation of icons, whose relation to their object is 'simply' one of resemblance in some respect. The interpretation of symbols, on the other hand, requires access to the (sometimes complex) conventions by which the sign is

---

[113] Ibid., Chapter 3.
[114] Ibid., x–xii.
[115] Ibid., 227.

related to its object (though, as I shall note below, a complex convention may be interpretable by a 'simple' process). This is not to deny that icons may be complex in their composition (a work of art, the structure of a narrative, the total quality of a person's life). Nevertheless, that complexity gives rise to a whole which, as a whole, stands (simply) in an iconic relation to an object (see §3.1.3).

If the capacity of (some) signs to represent that which is on the infinite side of the finite/infinite boundary does not ultimately reside in their complexity, where does such a capacity come from? How are humans able to transcend their finite selves in the quest for the infinite? Of course the theological answer, to which I fully subscribe, is that this capacity comes not from any purely human capability or endeavour, but from the grace of God. What my account adds to this theological axiom is an approach to the anthropological side of the coin. I shall draw here on Peirce's distinctions between three types of inference: deduction, induction and abduction (§1.4.1). Consider the kind of inference that may be involved in the interpretation of symbols, indexes and icons. To translate a symbol we only need to know the convention relating the symbol to its object. If we know this convention the translation process can be automatic – we can *deduce* from a certain symbol that a corresponding object is represented. A correctly performed deduction will always yield a correct inference if its premises are correct. Deductions are therefore the most reliable, but least generative, forms of inference; they do not yield any new knowledge that was not already implicit in the premises. In this sense, symbols are not necessarily the highest but, rather, the lowest kind of representation. A machine can interpret (or at least translate) symbols, as can a simple biological cell. The genetic code is a system of symbols, and a bacterium can read it.

Indexes, on the other hand, are interpreted by inductions. I know that usually the presence of smoke will be associated with a fire that has produced it. On any individual occasion, when I see smoke I may draw the inductive inference that there is a fire. The inference is fallible, but (unlike the simple translation of symbols) capable of generating some new knowledge. The least reliable but most informative kind of reasoning is an abduction, the method by which hypotheses are generated.[116] Hypotheses have the potential to be highly generative,

---

[116] See EP 1.198, though Peirce does not use the term abduction there.

but are liable to be falsified. Icons are interpreted by abductions in the sense that the inference – something is, in some respect, like something else – is a kind of hypothesis.[117] A great deal of new knowledge can be generated by noticing similarities of appearance, parallels of organization, and so on. I have already referred to Darwin's famous early diagrammatic representation of biological evolution (§3.3.1). In that example we may say that Darwin's insight about the relation of different species to one another took the form of an abductive inference based on an iconic relationship: Darwin hypothesized that the relation between biological species is *like* the relation between the branches of a tree. In short, it would be a mistake to regard the kinds of reasoning associated with icons as simpler, in the sense of being less generative, than reasoning associated with symbols. On the contrary, there is a strong sense in which the reverse is true.[118]

I suggest, then, that an adequate theological anthropology must recognize the central importance of the human capacity for abductive reasoning based on iconic representations. I propose that this God-given capacity for making inferences beyond the immediately apparent may be appropriately called 'the gift of abduction'. In order to appreciate the value of this gift, imagine a world in which abduction was not a form of inference open to creatures. If the world were not structured in such a way as to make abduction a creaturely possibility, then finite creatures would be trapped in an epistemological prison. No new knowledge would ever be possible beyond the very limited kinds afforded by deductions and inductions. The wonder of the gift of abduction does not reside in the 'complexity' of the sign-types on which it depends, but in their 'simplicity'. The gift of abduction is principally associated with icons rather than symbols. The revelatory potential of the world does not arise because symbols are capable of

---

[117] Indeed, Peirce argued that perception is an inherently abductive type of process (EP 2.228–229).

[118] Peirce alluded to possible connections between types of inference and the three kinds of sign-object relation. In CP 2.96–97 he makes a connection between deductions and indexes (the premises of a deduction *point* to the conclusion), and between inductions and symbols (the basis of this association being more obscure). This differs from the associations I have made above, in that I link indexes with inductions and symbols with deductions. The difference may arise from the fact that Peirce is asking, by what kind of sign are conclusions of different kinds of inference are characterized? In contrast, I am asking, by what kind of inference are different kinds of sign typically interpreted? In any case, the main point of my argument here is that abductions and icons are closely related, which is consistent with Peirce's view.

forming the upper rungs of a semiotic 'ladder' that is necessary to ascend from the finite to the infinite, but because the gift of abduction allows certain dialectical juxtapositions of icons and symbols to render the fabric of the world transparent to the transcendent. It is by the gift of abduction that God's grace allows the semiotic matrix to function as a 'semiotic window' on the infinite.

3.4.2   *Discipleship as Interpretative Transformation*

It is often noted that scripture and tradition hold a wealth of different perspectives on the plight of creaturely existence, and a corresponding diversity of understandings of the basis of redemption and salvation. A focus on creaturely guilt may be associated with a view of salvation as acquittal or forgiveness; a focus on oppression with an account of redemption as liberation; a focus on ignorance with an emphasis on the redemptive effect of illumination or enlightenment.[119] Depending on their own contexts and histories, different communities may legitimately find it helpful to focus on one or other of these elements. There may be a danger, however, of failing to recognize that, as Trevor Hart puts it,

> the metaphors [acquittal, forgiveness, sanctification, bestowal of new life, illumination, or liberation] are not to be understood as exchangeable, as if one might simply be substituted for another without net gain or loss, but complementary, directing us to distinct elements in and consequences of the fullness of God's saving action in Christ and the Spirit. To select a particular metaphor from among those available, therefore, and to develop it in isolation from or at the expense of others, is to risk a partial and inadequate grasp of the reality of redemption.[120]

A charge that might be made against my semiotic account of the Incarnation, then, might be that it focuses exclusively on the salvific role of illumination or enlightenment at the expense of any account of, say, an objective effect of the Cross in securing our acquittal from guilt or purification from sin.

In anticipation of such criticism I wish fully to acknowledge, first, that my approach does indeed centre on the theme of illumination. In that respect it is unashamedly Johannine in its emphases: Jesus is

---

[119] Trevor Hart, "Redemption and Fall," in *The Cambridge Companion to Christian Doctrine*, ed. Colin E. Gunton (Cambridge: Cambridge University Press, 1997), 190.
[120] Ibid.

the Word (John 1:14), the light of the world (John 8:12). As an initial response to such criticism, I would point out that John's Logos Christology – and by extension my own semiotic approach – is nevertheless entirely consistent with other perspectives on redemption found in the New Testament. The illumination that the Word brings into the cosmos is not merely a new intellectual insight but the means of deliverance from a world characterized by darkness (John 1:5; 12:46), death (5:19–27; 8:37, 44), sin (8:21, 34), slavery (8:34–36) and falsehood (8:44).[121] Furthermore, the full revelation of God's glory in the person of Jesus depends on his being raised up on the Cross (John 8:28), and the sending of the Spirit is contingent upon Jesus' death and resurrection (John 16:7).[122] In other words, Jesus' embodiment of the full and exact quality of God's very being depends on, and culminates in, his death on the Cross, and the capacity of human creatures to recognize (interpret) the significance of this qualisign depends on the subsequent particular gifts of the Spirit – the ground of all interpretation – that are made possible by the Cross and Resurrection.

A further sense in which the semiotic model provides an account of the redemptive effect of the Incarnation that goes beyond (mere) enlightenment depends on specifying the kind of *interpretative response* that may be made to the qualisign of God's being that is embodied in the person of Jesus. In short, I suggest that when Peirce's ideas about the three possible kinds of interpretant are taken into account it becomes evident that the Incarnation is not merely *informative* about God, but potentially *transformative* of those creatures who, by God's grace, are enabled to make interpretative responses to the embodiment of God's being in the world.[123]

Robert Neville's approach to religious 'symbols' may, again, offer a starting point for our analysis. The transformative potential of religious symbols is an important theme in Neville's work. The purpose of religious symbols is, as Neville puts it, "to adjust the interpreters so that they themselves, personally and in community, come into better

---

[121] D. Moody Smith, *The Theology of the Gospel of John* (Cambridge: Cambridge University Press, 1995), 81.

[122] Cf. Ibid., 120.

[123] In making a distinction in this context between the Incarnation as 'informative' or 'transformative' I do not imply that creaturely redemption is anything other than wholly dependent upon the grace of God. My point is that an account of discipleship as grace-enabled interpretative transformation gives rise to a view of God's redemptive activity that goes beyond 'mere' creaturely enlightenment.

and deeper accord with the religious objects".[124] In order to achieve this transformative purpose a symbol must, according to Neville, be in some sense true to its object, where 'object' is understood in a broad enough sense to include God. Neville proposes that the truth of religious (and other) symbols is a function of their capacity to effect a "carryover of value" from the object to the interpreter.[125] He contrasts this view with Aristotle's account, according to which knowledge consists of a carry-over of the *form* of the object into the mind of the knower. According to Neville, in devotional contexts the "symbol" thus acquires a "dual reference", on the one hand referring to a finite/infinite contrast, and on the other referring to the devotee "as engaged by the divine so symbolised".[126] A consequence of this account is that, in the case of religious symbols, "the carryover is something like the realization of the divine *in* the person".[127]

I wish to follow Neville's lead in emphasizing the importance of the transformative aspect of interpretative practices in religion, but I do so by suggesting a somewhat different appropriation of Peirce's semiotics. Rather than leading to the idea that the divine is realized in some way in the interpreter, my view leads to an account of discipleship as a set of different kinds of interpretative, transformative, responses to the person of Jesus.[128]

According to T. L. Short's reconstruction of Peirce's mature semiotic theory, an interpretation is always some kind of change of state occurring as a result of something, the sign, where this change of state, or response, has the character of occurring *for a purpose*.[129] As I shall discuss in more detail in §4.2.1, whether an interpretation achieves its purpose depends on whether the sign, to which the interpretation is a response, has the relation to its object that the interpretation supposes. In effect, the interpreter takes the sign to be a surrogate for the object. In §§1.3.2–1.3.3 I introduced three ways in which signs can relate to objects (as icon, index, or symbol) and three ways in which a

---

[124] Neville, *Broken Symbols*, 151–52.

[125] Ibid., 240.

[126] Ibid., 171–72.

[127] Ibid., 253, italics mine.

[128] Nielsen likewise proposes, with particular reference to the Fourth Gospel, that the disciples' responses to Jesus may be understood in terms of Peirce's distinction between emotional, energetic and logical interpretants. Nielsen, *Secondness of the Fourth Gospel*, 134–37.

[129] Short, *Development of Peirce's Theory*, 230–35.

sign-vehicle can function as a sign (as qualisign, sinsign, or legisign). My account of the transformative aspect of religious interpretations depends on a further set of distinctions, this time between the different possible types of interpretant of the sign. In his early semiotics Peirce assumed that all interpretants are thoughts. From about 1904 he extended the possible kinds of interpretant to include feelings and actions (§1.3.1). I wish to suggest that interpretative feelings, actions and thoughts are the modes in which creatures (humans in particular) can become oriented towards God in response to relevant signs. This includes the interpretative responses made to the sign constituted by the life, death and resurrection of Jesus – the embodied qualisign of God's being in the world.

Let us first consider *thoughts* as interpretants. It is often noted that theological discourse follows from reflection on religious practice, rather than the practice following from theology. But that is surely not the whole story. If theology is an interpretation of praxis, what is the ultimate interpretant of the theology? The question is a semiotic one, equivalent to one of the problems arising from Peirce's early formulations of his theory of signs. According to Peirce's early semiotic theory, all interpretants are thoughts. However, since thoughts are signs, it appears to follow that interpretation must proceed infinitely: the meaning of a thought could only be understood by reference to its interpretation by another thought-sign, and so on *ad infinitum.* As I explained in §1.3.1, Peirce eventually solved this problem by supposing that the 'ultimate' interpretants of a thought or concept are those habits of action to which the thought or concept gives rise. For example, the thought that the stove is hot is ultimately interpreted by my habit of avoiding contact with the stove if I don't want to get burned, and of putting the kettle on the stove if I want a cup of tea. In this way, late in his life, Peirce thus connected his semiotic theory with his pragmatism.[130]

Terrence Tilley argues that Christology is ultimately constituted not by doctrinal formulae but by the practices of discipleship.[131] Putting this in Peircean terms we may say that the 'ultimate interpretants' of the historical Trinitarian and Christological formulae are the habits of discipleship to which they give rise. This is not to claim that the praxis

---

[130] Ibid., 228.
[131] Tilley, *The Disciples' Jesus.*

starts from the formula. Rather, the idea is that there is a reciprocal relation between concept and practice: my *concept* that the stove is hot is derived partly from my *experience* of burning myself on it, or of cooking on it; but the ultimate interpretant of the concept of the stove's hotness is the set of habits to which the concept gives rise. Discipleship, then, is the formation of habits. These habits may become ingrained – one might say instinctive. But they are not habits acquired unconsciously, as in the natural selection of animal instincts, but deliberately developed by practice. A paradigmatic scriptural example of habits as the ultimate interpretants of concepts and thoughts is found, I suggest, in the story of the two disciples on the road to Emmaus (Luke 24:13–35). These disciples "were talking and discussing" (24:15) the events that had occurred in Jerusalem (i.e., they were exchanging thoughts about the events), when they were joined by Jesus, whom they did not recognize. In response to their puzzlement, Jesus "interpreted to them the things about himself in all the scriptures" (24:27; i.e., a further explanation in terms of thought-signs). However, the disciples' ultimate understanding of Jesus' explanation did not occur until the three of them participated in the table fellowship that had been the habitual centre of Jesus' ministry and teaching: "When he was at the table with them, he took bread, blessed and broke it, and gave it to them. Then their eyes were opened, and they recognized him; and he vanished from their sight" (24:30–31). In other words, once the habit of discipleship is enacted as the ultimate interpretant of the thoughts in question, the chain of thought-signs is in no further need of thought-mediated explication.

Peirce's second kind of interpretation is that brought about by an 'energetic' interpretant, or interpretation by an action. Peirce uses the example of a soldier on parade who is commanded by an officer to "Ground arms!".[132] The soldier may think for a moment, "I am being told to bring my rifle butt down". When, after this brief deliberation, he or she does so, the action is the interpretation of the preceding thought. In fact a well-trained soldier will perform the action in direct response to the command without any intervening deliberation, in which case the action is the direct interpretant of the command. A paradigmatic scriptural example of interpretative action is the response of the first disciples to Jesus' call to "follow me" (Mark 1:17). We are not told what

---

[132] Short, *Peirce's Theory of Signs*, 201.

Simon and Andrew *thought* about Jesus' call; what is clear from the story is that Jesus' command was interpreted by an action: "*immediately they left their nets* and followed him" (Mark 1:18; emphasis mine). We do not have to suppose that this action was undertaken entirely blindly or without some background against which it made sense. The important point is that the mode of Simon and Andrew's interpretation of Jesus' command was not primarily a thought or a feeling but a change of state (they were no longer with their nets, but instead were following Jesus). In §4.2.2 I will suggest that a capacity purposefully to change state in response to a sign may be a fundamental characteristic of any living entity, and that consideration of the simplest kind of entity capable of making such an interpretative change of state may offer a new way of thinking about the problem of the origin of life. An amoeba responds to a gradient of attractant molecules as a sign of food 'over there' for the purpose of obtaining nutrition. The interpretant of the sign is an action: a change of state from being stationary to crawling in the direction of food. At the other end of the interpretative scale, humans are able to respond to signs in the world, including the very particular kind of sign constituted by the person of Jesus, by acting in such ways as to further the purposes of God.

In addition to thoughts and actions as modes of sign interpretation, Peirce held that a third kind of interpretant consists in feelings or emotions. Although it may at first seem strange to suggest that feelings can interpret signs, there has been much recent interest in the cognitive role of emotions.[133] If we are accused of a misdemeanour, a feeling of shame may be a form of interpretation of the accusation, serving to help us to respond appropriately to the charge. A response of indignation is an alternative possible interpretant of the same sign; depending on the circumstances, shame and indignation could be correct interpretations or misinterpretations of the situation.[134] Either way, they would each appear to serve the purpose of providing the interpreting individual with a general orientation and motivation for further, more specific, cognitive or agential responses. Mark Wynn, in his survey of approaches to the cognitive aspect of emotions, draws attention, in addition, to the role of emotions in prompting or enriching

---

[133] For example, Mark Wynn, *Emotional Experience and Religious Understanding: Integrating Perception, Conception and Feeling* (Cambridge: Cambridge University Press, 2005).

[134] Short, *Peirce's Theory of Signs*, 205–06.

conceptually-mediated understandings of the world, in directing our attention to salient features in our environment, and in pointing us to unresolved tensions in our relation to ourselves or our world.[135] Perhaps a feature common to all of these various functions of emotional interpretants is that they involve the whole of the organism. For example, in different ways the emotions of fear and desire are responses to situations that prepare and orient the whole creature for some imminent eventuality that may require a co-ordinated bodily response. As Wynn puts it, "Emotional feelings are embodied appraisals, which are correlated with…situations of existential import".[136]

As I have noted, interpretations are always made for a purpose. The examples of emotional interpretants given above all involve some purpose beyond the emotion itself (such as preparing us for flight or fight, or attuning us to our moral situation). It is interesting, however, that there appear to be some emotional interpretants where the distinction between the interpretative response and the purpose of that response, and indeed between these and the object represented in the sign-relationship, seems to collapse. Peirce's principle example of an emotional interpretant was that of the feelings evoked by listening to a piece of music.[137] A piece of music may be regarded as a qualisign – a sign, one might say, of a musical 'feeling'. Thus Peirce wrote,

> …the performance of a piece of concerted music is a sign. It conveys, and it is intended to convey, the composer's musical ideas; but these usually consist merely in a series of feelings. (CP 5.475)

Feelings thus expressed musically cannot, Short suggests, be adequately interpreted merely as referring to, say, the emotions of joy or sadness, though these emotions may indeed be evoked. Rather, the musical feeling *is* the music; it is nothing less than the unique quality brought into being by that particular piece of music. As Short puts it, the emotional interpretant of the music "is not one's ordinary feeling, for example, of sadness; it is the same complex of feeling as that embodied in the piece of music heard".[138] When asked to explain the 'meaning' of a piece of music he had just played, Beethoven is alleged to have responded by playing the entire piece again. The aesthetic purpose of listening is

---

[135] Wynn, *Emotional Experience*, 93–108.
[136] Ibid., 121.
[137] Short, *Peirce's Theory of Signs*, 204–05.
[138] Ibid., 204.

fulfilled, so far as it is fulfilled at all, in the listening itself (which is not to deny that there may be other purposes of listening to music other than the aesthetic).

Peirce's semiotics thus appears somewhat truncated when applied to the case of emotional interpretants of music. According to Short, music is a "limiting case of a sign" in the sense that the feeling embodied in the music is simultaneously the sign (as performed), the object (as felt by the composer), and the interpretant (as felt by the listener).[139] Another way of putting this is to say that emotional interpretants have the power to place us, so to speak, *in the immediate presence* of the object. In Peirce's philosophical scheme, in which mediation is central to his whole metaphysic, it is very interesting that the awareness of the presence of some quality seems to be a kind of experience in which mediation is apparently reduced to a minimum.[140] The paradigmatic New Testament example of such an experience occurs at the Transfiguration, when Jesus "was transfigured before them, and his face shone like the sun" (Matt. 17:2; cf. Mark 9:2–8, Luke 9:28–36).[141] In all three accounts in the synoptic gospels the disciples' responses include feelings of delight (hence Peter's declaration, "Lord, it is good for us to be here") and fear. In addition, Peter was lost for words (Mark 9:6), or did not know what he was saying (Luke 9:33), suggesting that the interpretative response to such an experience could not be fully articulated in words. In terms of experiences more familiar to present-day disciples, part of the function of liturgy may be that of bringing worshippers into contact with the 'boundaries' or 'frontiers' of existence; well constructed liturgical spaces and practices have the capacity to evoke emotional responses that draw us into awareness of the presence

---

[139] Ibid., 205. Cf. Vincent M. Colapietro, *Peirce's Approach to the Self: A Semiotic Perspective on Human Subjectivity* (New York: State University of New York Press, 1989), 16.

[140] I hesitate to call this *unmediated* experience; nevertheless, my observation is that, in these kinds of experience, mediation seems to collapse towards pure presence.

[141] The theme of transformation by face-to-face encounter with God is taken up by Paul in 2 Cor. 3:18: "And all of us, with unveiled faces, seeing the glory of the Lord as though reflected in a mirror, are being transformed into the same image from one degree of glory to another". See David F. Ford, *Self and Salvation: Being Transformed* (Cambridge: Cambridge University Press, 1999); Steven J. Sandage and F. LeRon Shults, *The Faces of Forgiveness: Searching for Wholeness and Salvation* (Grand Rapids: Baker Academic, 2003).

of God.[142] In doing so they may have the capacity to bring us face to face with the '*mysterium tremendum et fascinans*'.[143]

Perhaps these observations about the way in which some forms of semiosis tend towards a collapse of the semiotic triad may give us a clue about the ultimate goal to which the semiotic structures of the cosmos are ultimately oriented. In terms of the semiotic model of the Trinity, we may perhaps suspect that the ubiquitous and ever-ramifying patterns of otherness (Secondness) and mediation (Thirdness) that characterize the world are the outward movement of the God who ultimately offers, by the grace-endowed possibilities of those patterns of difference and the overcoming of difference, the promise of an eventual *immediate* (in the sense of minimally-mediated) presence. The emotional aspect of our religious interpretative responses, particularly our responses to Jesus, the embodied qualisign of God's eternal being, may be a foretaste and prolepsis of this promised immediate presence of God.

Such speculations about the ultimate metaphysical import of certain kinds of emotional interpretant should not be taken to mean that I wish to diminish the role of more 'ordinary' instances of feeling, or to disconnect emotional experience from other modes of religious engagement. Moreover, it is important to recognize legitimate concerns that have been raised about the dangers of over-emphasizing the importance of emotional experience in the practices of discipleship.[144] As Ruth Burrows puts it, insistence on the importance of religious 'experience' is absolutely right,

> provided we understand experience in the proper sense, not as a transient emotional impact but as living wisdom, living involvement. All the truths of faith there in our minds will be translated into practical terms, all we believe becoming principles of action. Thus spiritual 'experience' is as necessary a mark of a loving soul, of a holy person, as medical 'experience' is of a doctor. So often, however, what the less instructed seek is mere emotion.[145]

---

[142] See Graham Hughes, *Worship as Meaning: A Liturgical Theology for Late Modernity* (Cambridge: Cambridge University Press, 2003), 148–56, 295–99. Hughes proposes an explicitly Peircean approach to the semiotics of liturgy.

[143] Rudolph Otto's phrase, meaning 'fearful and fascinating mystery'. Rudolf Otto, *The Idea of the Holy*, trans. John W. Harvey (1917, Harmondsworth: Penguin, 1959), 26–55.

[144] Wynn, *Emotional Experience*, 179–94.

[145] Ruth Burrows, *Guidelines for Mystical Prayer* (London: Sheed and Ward, 1976), 55. Quoted in Wynn, *Emotional Experience*, 179.

Burrows's observation that emotional experience should be translated into "principles of action" is consistent with Peirce's view that the ultimate logical interpretants are interpretative habits. Likewise, Jonathan Edwards held that the action of the Holy Spirit does not merely produce new "religious affections" but, rather, confers an "abiding principle of action".[146] As Wynn writes, summarizing his own position:

> we can take emotional feelings to be cognitively important without supposing that they are important in proportion to the degree of their felt intensity, or that they are to be cultivated for their own sake, or that they invite the kind of self-absorption that is reflected in [a] decision to withdraw from the world. Nor need they imply mere 'subjectivism' and the forsaking of 'doctrine'.... On the contrary, emotional feelings can provide tradition-grounded ways of reading doctrines in depth, so that they acquire action-guiding force, and take root in a larger self 'of which our intellectualizing is only the thinnest of surfaces'.[147]

This mutual dependence of emotion, action, and intellectual understanding is reflected, I suggest, in the prophet Micah's summary of the pattern of life to which God calls all people:

> This is what Yaweh asks of you:
> only this, to act justly
> to love tenderly
> and to walk humbly with your God. (Mic. 6:8; Jerusalem Bible)[148]

Micah's message invites a Peircean reading, according to which discipleship may be understood to involve three complementary types of semiotic engagement with the world, namely:

- developing interpretative habits of *action* – "do justly" – that reflect the truth about the world and promote God's purposes of justice and peace;
- cultivating interpretative *feelings* – "love tenderly" – that promote, orientate and inform such habits of action;

---

[146] Quoted in Wynn, *Emotional Experience*, 179–80.

[147] Ibid., 194. The quotation in the final sentence is from John Cottingham, *Philosophy and the Good Life: Reason and the Passions in Greek, Cartesian and Psychoanalytic Ethics* (Cambridge: Cambridge University Press, 1998), 165.

[148] See Walter Brueggemann, Sharon Parks, and Thomas H. Groome, eds., *To Act Justly, Love Tenderly, Walk Humbly: An Agenda for Ministers* (Eugene: Wipf and Stock, 1997).

- subjecting our interpretative *thoughts* to criticism and correction – "walk humbly" – in recognition that all creaturely knowledge is provisional and fallible.

These reflections on the semiotic basis of religious transformation may further suggest an approach to the idea, central to Eastern Orthodox theology, of *theosis* or participation in the divine life. As I have already noted (§1.3.3) , in addition to the insight that interpretants may take the form of emotions, actions and thoughts, Peirce also made a distinction between the 'immediate', 'dynamic', and 'final' interpretants of a sign. As an illustration of this distinction, consider an intersection of footpaths at which a signpost has become ambiguous by virtue of having been slightly dislodged from its original orientation. The immediate interpretants of a sign are the (often numerous) possible interpretative responses that might be made to a sign, prior to any actual interpretation. The immediate interpretants of the dislodged signpost include, for example, the inference that it may have been windy recently, or the thought that the ranger should be more diligent. A dynamic interpretant is an interpretation actually made. After examining the evidence I may conclude that the signpost originally pointed to the path on the left; by taking that route I actualize a dynamic (and possibly mistaken) interpretant of the sign. A final interpretant is the interpretant that would be ideally adequate to the purpose for which the sign is being interpreted. Had I been more careful in evaluating the evidence I might have seen that the signpost must have originally pointed to the path on the right: the most adequate interpretative response for my purpose of reaching a particular destination would have been to take the righthand path.

I have suggested above that the various dimensions of discipleship may be understood in terms of the range of possible types of creaturely interpretative response: feelings, actions and thoughts. The ultimate purpose of such responses may be said to be that of inviting, actualizing, and furthering God's kingdom in the created realm. Many different interpretative responses may be made to the signs around us, but for the ultimate purpose of bringing in God's kingdom the final interpretants of such signs are those that would be made by a fully Word-informed and Spirit-filled interpreter. In that case, the creaturely activity of seeking the final interpretants of the myriad signs within the created order (whether instances of beauty or love, suffering or injustice) may be understood as the basis of creaturely participation in the life of God. A life increasingly directed towards and constituted

by making those interpretive responses that are the most adequate to the purpose of bringing in the Kingdom would be a life progressively drawn into the life of God. In that sense semiosis may be understood as the basis of theosis.

In summary, and drawing these ideas together with the conclusions of previous sections of this chapter, a semiotic approach to theological anthropology suggests that the task of committing our whole self to the path of discipleship amounts 'only' to this: that all of our interpretative thoughts, interpretative feelings, and interpretative actions are directed towards fulfilling the purposes of God. The nature and purposes of the infinite God can be known by finite creatures only because of the gift of abduction; that is, because the ontological structure of the cosmos is such that creatures can escape the epistemological confines of deductions and inductions (§3.4.1). The kind of creature that can thereby be a 'hearer of the Word' is one who, by God's grace, has evolved a capacity to enter the 'semiotic matrix'; that is, who is able dialectically to combine symbols and icons in such a way as to open up a semiotic window on the transcendent (§3.3.2). The everyday practice of discipleship involves making self-transforming interpretations in response to the 'ordinary' signs we come across in the world: signs of untruthfulness, injustice, and suffering. For the purposes of Christian discipleship, those signs must be read in the light of the signs that together constituted the life of Jesus. In other words, the everyday situations to which disciples are called to respond acquire their ultimate significance from being interpreted in the light of the Gospel-mediated experience of Jesus' life, death and resurrection. If the life of Jesus could adequately be understood merely as an example of an exceptionally good human being then such interpretative responses would have the capacity to carry us only so far. However, the structure of the created order is such that it can become the fabric of the embodiment of the quality of God's very self, and indeed has done so in the person of Jesus (§§3.1–3.2). Because of this, creaturely interpretative responses made to, or in the light of, the life of Jesus, have the capacity truly to orientate us towards the authentic purposes of God. Moreover, in facing the person of Jesus – the qualisign of the very being of the Father – creatures have been granted the possibility of making the ultimate goal of every (Spirit-grounded) interpretative response that of standing in the immediate presence of their triune Creator and of participating in the semiotic life of God.

*   *   *

I have proposed, then, a semiotic model of the Trinity (Chapter 2) and have tested and extended the semiotic model in the present chapter by developing a semiotic account of the Incarnation. This semiotic approach to issues in Christology has not only given rise to a Peircean perspective on theological anthropology but has also suggested new conceptual and empirical approaches to the scientific investigation of human evolution. In the next two chapters I shall press the evolutionary implications of the semiotic model further. In Chapter 4 I consider the theological implications of Darwinian evolutionary biology, and suggest that the field of 'biosemiotics' offers a resource for a new theology of nature. In Chapter 5 I develop this suggestion in the light of Peirce's evolutionary cosmology, and hypothesize that the threefold patterns of Peirce's categories and the triadic structures of semiosis may be understood as 'vestiges of the Trinity in creation'.

EVOLUTION, THEOLOGY AND BIOSEMIOTICS

> The vast majority of our contemporary naturalists hold the opinion that the true cause of those exquisite and marvellous adaptations of nature for which, when I was a boy, men used to extol the divine wisdom, is that creatures are so crowded together that those of them that happen to have the slightest advantage force those less pushing into situations unfavorable to multiplication.
>
> C. S. Peirce, 1893[1]

Peirce held that all inquiry begins with an 'irritation of doubt', an irritation that disturbs some existing 'mass of cognition' (§1.4.1). In this chapter I am concerned with the way in which some aspects of the mass of cognition constituted by the Christian tradition may appear to be called into question by Darwinian evolutionary biology.[2] The Judaeo-Christian tradition generally holds, for example, that human beings have a special place in creation, a role that includes in some way contributing to bringing the purposes of creation to fulfilment. The picture that emerges from the scientific study of living things in the light of contemporary Darwinism, on the other hand, is one in which humans are (merely) one evolved animal species among others. The Hebrew and Christian scriptures witness to a God who acts providentially within the world, but Darwinism offers an account of the mechanisms and processes behind the unfolding of the history of life in which the need to invoke non-natural explanations of the outcome seems to have progressively diminished. And the chanciness

---

[1] Charles S. Peirce, *The Essential Peirce: Selected Philosophical Writings, Volume 1 (1867–1893)* (Bloomington: Indiana University Press, 1992), 357.

[2] The first section of the present chapter (§4.1.1) draws on Andrew J. Robinson, "Continuity, Naturalism and Contingency: A Theology of Evolution Drawing on the Semiotics of C. S. Peirce and Trinitarian Thought," *Zygon: Journal of Religion and Science* 39, no. 1 (2004). The ideas in the second half of the chapter (§4.2) were first presented in Andrew Robinson and Christopher Southgate, "A General Definition of Interpretation and Its Application to Origin of Life Research," *Biology and Philosophy* 25, no. 2 (2010).

of the evolutionary process is such that, if the 'tape of evolution' were to be re-run, humans might not even appear in the story.[3]

As I mentioned in my Introduction, doubts such as these provided the source of the 'irritation' that originally motivated the present inquiry. It may seem odd that examination of the sources of my original 'irritation' has been deferred until this mid-point of the book, given that substantial parts of my response to that irritation of doubt have already been put in place. The justification for this strategy lies in the non-foundationalist structure of my overall argument. The elements of the philosophical-theological framework that I am constructing are closely inter-related and mutually supportive of each other. Broadly speaking one might say that the three main elements of the framework are a doctrine of God (Chapter 2), a doctrine of humanity (Chapter 3) and a doctrine of creation (Chapter 5). All three elements draw on Peirce's metaphysics and semiotics, which therefore had to be introduced at the outset (Chapter 1). For heuristic and explanatory purposes it has been convenient to deal with these key elements in that order. This does not imply that I see, for example, the doctrine of the Trinity as having epistemological priority over, say, reflection on the Incarnation. (Discussion of this and related issues of theological methodology will be deferred until Chapter 6.) Similarly, the fact that the epistemological structure of my argument does not have to be built up from the bottom but, rather, hangs together as a network of hypotheses, means that it has been possible to wait until now to consider issues that, in the development of my own thinking, were starting points for the inquiry. The contents of this chapter are preparatory for the development of the Peircean approach to the theology of creation that I shall propose in the following chapter, hence its appearance at this point in the book.

The structure of this chapter is as follows. In §4.1.1 I suggest that the challenges posed by evolutionary theology to Christian theology can be thought of in terms of three main themes: *evolutionary continuity*, *historical contingency, and ontological naturalism*. I further suggest that each of these themes turns out to correspond loosely, but perhaps not entirely coincidentally, to a distinct phase in the development of Darwinian evolutionary biology. In §4.1.2 I

---

[3] See, for example, Stephen Jay Gould, *Wonderful Life: The Burgess Shale and the Nature of History* (Harmondsworth: Penguin, 1991).

introduce the field of biosemiotics, a currently somewhat marginal-
ized area of theoretical biology which attempts to use semiotic con-
cepts to shed light on fundamental problems in the scientific study
of living things. I suggest that biosemiotics may offer resources for a
theology of nature that is able to take the scientific findings of evo-
lutionary biology with utmost seriousness. However, it is necessary
to acknowledge that some philosophers of biology are sceptical as to
whether the application of semiotic concepts to biology is anything
more than a terminological gloss on processes that can ultimately be
explained entirely mechanistically. The second set of sections in the
chapter is devoted to addressing this issue. In §4.2.1 I summarize work
done in collaboration with my colleague Dr Christopher Southgate
on developing a formal definition of interpretation, a definition that
draws on Peirce's account of semiosis as an end-directed (teleologi-
cal) process. In §4.2.2 I show how this definition may be theoretically
and empirically fruitful, focusing particularly on the contribution that
it may make to understanding the origin of life. In §4.2.3 I explore
the definition further by making some comparisons with the field of
'teleosemantics'.

4.1   Darwinism and Theology

4.1.1   Three Phases of Darwinism

Darwinism is itself evolving, and has done so continually during the
century and a half since the publication of Darwin's *Origin of Species*
(1859).[4] In this section I shall suggest that the evolution of Darwin-
ism may be thought of broadly in terms of three main historical
phases, each of which raises a key theme for Christian theology.

The first major phase in the evolution of evolutionary theory began
with the publication of the *Origin of Species* and lasted to the early
twentieth century. This is not to forget that there had been significant
evolutionary theories and debates before the *Origin of Species*, particu-
larly in the first half of the nineteenth century.[5] It was Darwin's work,
however, that succeeded in convincing both the scientific community

---

[4] Charles Darwin, *The Origin of Species by Means of Natural Selection or the Pres-
ervation of Favoured Races in the Struggle for Life* (London: John Murray, 1859).
[5] John Hedley Brooke, *Science and Religion: Some Historical Perspectives* (Cam-
bridge: Cambridge University Press, 1991), 226–74.

and the wider public of the fact that all species are related by common ancestry. The theme of evolutionary *continuity* is perfectly captured in Darwin's phrase 'descent with modification'.[6] However, although the publication of Darwin's theory led to rapid acceptance of the idea that all species are related by descent, the absence of any understanding at that time of the mechanisms of heredity weakened the case for 'natural selection', Darwin's proposed mechanism of evolution. Indeed, at the beginning of the twentieth century, Darwinism, in the sense of the notion of evolution by natural selection, was widely thought to be on its death-bed.[7]

The second phase of Darwinism began in the early twentieth century and came to fruition in the 1930s–40s. The insight that gave rise to this phase was the recognition of the importance of Gregor Mendel's work on inheritance and its relevance to Darwin's concept of natural selection. The result of combining the concepts of Mendelian inheritance with natural selection was the mathematical demonstration of the unexpected power of selection acting on small heritable variations. The 'neo-Darwinian' synthesis thus confirmed the likely importance of natural selection as an explanation of evolutionary change.[8] By demonstrating that the concept of natural selection provides a credible natural explanation of the mechanism of evolution, neo-Darwinism marked the end of any role for vitalistic notions, such as Henri Bergson's *élan vital*, within mainstream biology.[9] The second phase in the evolution of Darwinism may therefore, I suggest, be characterized by its affirmation of the adequacy of *naturalistic* explanations of the evolutionary process, even though (as I shall discuss

---

[6] Darwin preferred the phrase 'descent with modification' to the word 'evolution', possibly because the latter had a tendency to carry pre-formationist implications of a pre-ordained unfolding of events. David J. Depew and Bruce H. Weber, *Darwinism Evolving: Systems Dynamics and the Genealogy of Natural Selection* (Cambridge MA: MIT Press, 1995), 41.

[7] Ibid., 169–70. Peirce appears to express a contrary view in the passage quoted as the epigraph to this chapter.

[8] Ibid., 271–38.

[9] Ernst Mayr, "How Biology Differs from the Physical Sciences," in *Evolution at a Crossroads: The New Biology and the New Philosophy of Science*, ed. David J. Depew and Bruce H. Weber (Cambridge: MIT Press, 1985), 47; Henri Bergson, *Creative Evolution*, trans. Arthur Mitchell (London: Mcmillan, 1911). Bergson did not, in fact, advocate an uncritical version of vitalism, as is evident in his acknowledgement that: "…the 'vital principle' may indeed not explain much, but it is at least a sort of label affixed to our ignorance, so as to remind us of this occasionally, while mechanism invites us to ignore that ignorance" (44–45).

further below) the precise role of natural selection has subsequently become a matter of debate.

The third major phase in the history of Darwinism originated around the 1970s with various pressures on the neo-Darwinian synthesis.[10] One of the first revisions to the standard version of the synthesis concerned the rate of evolutionary change. The assumption of evolutionary gradualism – the notion that evolution proceeds at a constant rate – was challenged by the hypothesis that rates of evolution are better described in terms of a "punctuated equilibrium".[11] Although the idea that periods of relative evolutionary stasis are followed by periods of more rapid change is not inconsistent with a neo-Darwinist understanding of evolution by natural selection,[12] the resulting view of the evolutionary process is nevertheless somewhat different. In place of the gradualist view, in which natural selection may be thought of as giving rise to a systematic 'search' of the available ecological niches, the expanded synthesis presents a picture of evolution in which macro-evolutionary change can occur more abruptly and unpredictably.

One example of this apparent unpredictability is the relatively sudden appearance of multi-cellular creatures about 600 million years ago, after about 3000 million years in which life on Earth consisted of nothing more complex than single-celled organisms.[13] The creatures that appeared in this 'Cambrian explosion' showed a startling diversity of body plans, many of these early branches of the evolutionary tree having left no living descendants. At least some of this 'pruning' of the evolutionary tree seems likely to have been due to the chance occurrence of catastrophic events rather than as a predictable consequence of the continual gradual operation of natural selection. The best known recent example of such an event is the mass extinction which occurred in the late Cretaceous period, in which many genera (including the dinosaurs) were lost, probably largely as a result of a massive meteorite impact.

---

[10] Depew and Weber, *Darwinism Evolving*, 14.

[11] Niles Eldridge and S. J. Gould, "Punctuated Equilibria: An Alternative to Phyletic Gradualism," in *Models in Paleobiology*, ed. T. J. M. Schopf (San Francisco: Freeman, Cooper, 1972).

[12] Daniel C. Dennett, *Darwin's Dangerous Idea: Evolution and the Meanings of Life* (Harmondsworth: Penguin, 1995), 282–99.

[13] Gould, *Wonderful Life*.

The theory of punctuated equilibrium and the recognition of the role of catastrophes in evolution are examples of a more general trend in evolutionary biology over the last 40 years or so, according to which the strong neo-Darwinian emphasis on *adaptation* as the main or only explanation of biological form and evolutionary change has been called into question. One area of particular interest is the possible role of what is often called 'self-organization', the property exhibited by some kinds of dynamic system of developing order 'for free'.[14] The significance of chance and self-organization in biology is evident in the growing recognition of the complexity and fluidity of the genome. Many genetic mutations become fixed in populations for reasons other than direct selective advantage. The accumulation of so-called 'neutral mutations', genetic drift, and the effects of the genetic make-up of small founder populations all include strong elements of chance.[15] As with the other assumptions of 'hard' neo-Darwinism, any simplistic view of genetic change as a gradual process driven only by the requirements of adaptation has thus had to give way to a much richer, more complex, and multi-levelled view of the nature of evolutionary explanations.

A feature common to all of these pressures on the neo-Darwinian synthesis is the theme of *contingency*. As David Depew and Bruce Weber put it:

> Just as Darwin's work exploded the Victorians' cozy sense of space and time, so contemporary evolutionary speculation is forcing twentieth century Darwinians to adjust to the even more expansive, chancy, contingent worldview that is already present in modern cosmology but that has so far been contained in evolutionary biology by the comforting rationalism of our talk about adaptations, according to which, even if we do not invoke God, we still seem to be able to give good reasons for what we see around us.[16]

---

[14] Stuart A. Kauffman, *At Home in the Universe: The Search for the Laws of Self-Organization and Complexity* (Harmondsworth: Penguin, 1995), 71. See also, for example, D'Arcy Wentworth Thompson, *On Growth and Form* (1917; Abridged Edition ed. John Tyler Bonner 1961, Cambridge: Cambridge University Press: Canto imprint, 1992); Brian Goodwin, *How the Leopard Changed Its Spots* (London: Phoenix, 1995); Kauffman, *At Home in the Universe*.

[15] David J. Depew and Bruce H. Weber, *Evolution at a Crossroads: The New Biology and the New Philosophy of Science* (Cambridge: MIT Press, 1985), 230–31, 47–49.

[16] Depew and Weber, *Darwinism Evolving*, 15.

According to Depew and Weber, this third phase of Darwinism may be thought of as analogous to the shift in physics from the study of simple dynamic systems to that of complex dynamic systems; a move which, they claim, carries with it the loss of any possibility that such systems move towards a predetermined end or goal. Even Richard Dawkins's metaphor of the 'blind watchmaker'[17] may, according to this view, be too dependent on the analogy of design, even if non-divine in origin:

> …there is no watchmaker, blind or sighted, for the simple reason that there is no watch. Natural organization is not an artifact, nor anything like it, but instead a manifestation of the action of energy flows in informed systems poised between order and chaos. Directionalities, propensities and self-organization in a thermodynamic perspective actually exclude the notion that evolution is oriented toward an end in the intentional or design sense.[18]

I suggest, then, that the challenges presented by evolutionary biology may be thought of in terms of three key themes, and that each of these corresponds broadly to a major phase in the evolution of Darwinism. The theme of *evolutionary continuity* arises particularly in the first phase of Darwinism, when the theory of 'descent with modification' became widely accepted in scientific circles but the mechanism of evolution remained obscure. The theme of *ontological naturalism* arises especially from the second phase of Darwinism, when the neo-Darwinian synthesis demonstrated the power of natural selection as an evolutionary mechanism. The theme of *historical contingency* has been particularly prominent in the latest phase of Darwinism, which has been much informed by new insights into complex systems dynamics and the loosening of 'adaptationist' thinking in biology.

Of course, I do not wish to imply that either the history of evolutionary biology, or theological responses to Darwinism, have exactly followed such a tidy scheme. For example, theologians did not have to wait for the *Origin of Species* to be alerted to the fact that the Genesis accounts of creation ought not to be taken literally. Although in 1859 it may not have been common knowledge, that task had been achieved from within theology in the seventeenth and early eighteenth

---

[17] Richard Dawkins, *The Blind Watchmaker* (London: Longmans, 1986).
[18] Depew and Weber, *Darwinism Evolving*, 477.

centuries through historical criticism of the Bible.[19] Neither is it the case that theological responses to the issue of the integrity of nature were delayed until after the advent of the neo-Darwinian synthesis. For example, in 1889 the theologian Aubrey Moore famously argued that those "who oppose the doctrine of evolution in defence of a 'continued intervention' of God, seem to have failed to notice that a theory of occasional intervention implies as its correlative a theory of ordinary absence".[20] My suggestion that the relevance of evolutionary theory to theology may be thought of in terms of the issues of the themes of continuity, naturalism and contingency is therefore not intended to provide a purely historical account of the debate between Darwinism and theology, but to offer a conceptual framework that may be of some heuristic value, and ontological import.

4.1.2   Biosemiotics: Resource for a Theology of Nature?

The three themes that arise out of reflection on the evolution of Darwinism lie at the heart of three major areas of theological debate about the implications of evolutionary theory for Christian thinking. The issue of evolutionary continuity is a central focus of creationism, a key element of the standard forms of which is a denial of the continuity between biological species, particularly a denial of continuity between humans and the rest of the living world.[21] For theologians who do not find it necessary to reject outright the hypothesis of descent with modification – a hypothesis that has been accepted by most scientists from relatively early in the evolution of Darwinism – the theological challenge posed by the theme of evolutionary continuity is twofold. On the one hand, a theology of nature must provide an adequate account of how humans are related to, and what we have in common with, the rest of the natural world. On the other hand, theology must be able to give a scientifically coherent account of what, if anything, is unique about human existence. The danger is, on the one hand, of falsely separating humanity from the rest of cre-

---

[19] Brooke, *Science and Religion*, 263–70.
[20] Quoted in Christopher C. Knight, *Wrestling with the Divine: Religion, Science and Revelation* (Minneapolis: Fortress Press, 2001), 13.
[21] Ronald L. Numbers, *The Creationists: The Evolution of Scientific Creationism* (Berkeley: University of California Press, 1992), 3–19.

ation, and, on the other, of failing to recognize our genuine distinctiveness as a species.

The second theme, that of ontological naturalism, comes to the fore in current discussions of the question of 'divine action'. In theological discussions the concept of naturalism is often taken to have negative connotations, as a denial of any supernatural influence on the course of events in the world. A more positive way of thinking about the explanatory success of inquiries based on an assumption of, or inclination towards, ontological naturalism is to regard such success as a reflection of the *integrity* of the created order. The plausibility, or otherwise, of special acts of divine providence in the world, and the issue of whether such acts would involve disruption of the integrity of the fabric of the world, have been perennial themes over the last several decades of the science and religion debate. Such questions have been explored in particular depth in the course of a decade-long interdisciplinary project, *Scientific Perspectives on Divine Action*.[22] At the very least, the debates over divine action have helped to refute the view that current scientific knowledge is logically incompatible with theism. My project does not set out from an *a priori* assumption that there are no special divine actions. I confess, however, to having some doubts as to whether looking for loci for divine action within the causal nexus of the world is a theologically generative strategy, my principle concern being the question of whether identifying God as the cause of specific events in the created order may reduce God to the status of one finite causal agent among others. I am inclined to the view that affirming the causal integrity of nature, and anticipating the 'internal' adequacy of fully naturalistic explanations of the way the world has come to be the way that it is, may be the more theologically fruitful path.

The third major theme arising from reflection on the evolution of Darwinism, that of historical contingency, has been the focus of theologically-motivated debates about the extent and relevance of evolutionary 'convergence'. Pierre Teilhard de Chardin's vision of the

---

[22] The project was jointly sponsored by the Center for Theology and the Natural Sciences (CTNS) and the Vatican Observatory. Of particular relevance from the perspective of evolutionary biology are: Robert John Russell, Nancey Murphy, and Arthur Peacocke, eds., *Chaos and Complexity: Scientific Perspectives on Divine Action* (Vatican City: Vatican Observatory, 1995); Robert John Russell, William R. Stoeger, and Francisco J. Ayala, eds., *Evolutionary and Molecular Biology: Scientific Perspectives on Divine Action* (Vatican City: Vatican Observatory, 1998).

evolution of the cosmos proceeding inevitably to the genesis of a "noosphere" and an eventual final "Omega point" is one example of a theological scheme that postulates an eventual convergence towards a generic goal of the evolutionary process, in spite of the apparent contingencies of the details of evolutionary history.[23] More recently, in response to Gould's emphasis on evolutionary contingency, palaeontologist Simon Conway Morris has argued that the phenomenon of 'convergent evolution' is a reflection of an overall predictability about the process.[24]

Such approaches, which we might call the 'generic-goal' response to evolutionary contingency, have to show that the evolutionary outcome in question really is of a general rather than specific nature. Consider, for example, the phenomenon of consciousness. At first sight it might seem reasonable to suggest that the emergence of conscious beings is a plausible generic goal of the evolutionary process. But do we understand consciousness well enough to permit such a claim? If the most developed form of responsiveness to the environment had, in some alternative playing out of evolutionary history, arisen in descendants of, say, octopuses instead of apes, would it be recognizably the same phenomenon as human consciousness? Consideration of the importance of particular forms of embodiment to the evolution of cognition may suggest otherwise.[25]

I believe that the 'generic-goal' approach to evolutionary contingency is worth pursuing, but I suggest that any candidate goals must be genuinely generic and, furthermore, that such an approach will be most persuasive if it also offers a coherent approach to the themes of ontological naturalism and evolutionary continuity. I wish to ask, then, whether there is some property or process that could be regarded scientifically as a truly generic, likely outcome of the evolutionary story, and theologically as a worthy goal of God's creative work? Furthermore, can such a property or process be understood to be in continuity with the rest of biological evolution (and the prebiotic history of the universe) in such a way that its full or distinctive

---

[23] Pierre Teilhard de Chardin, *The Phenomenon of Man* (London: Collins, 1959).

[24] Simon Conway Morris, *The Crucible of Creation* (Oxford: Oxford University Press, 1998).

[25] See, for example, Maxine Sheets-Johnstone, *The Roots of Thinking* (Philadelphia: Temple University Press, 1990), ———, *The Corporeal Turn: An Interdisciplinary Reader* (Exeter: Imprint Academic, 2009).

emergence in humans appears to be, in some sense, a continuation and fulfilment of the evolutionary narrative? And would such a feature of the world fulfil the desideratum of being consistent with the hypothesis, derived from and supported by both science and ordinary experience, that the world exhibits a rather beautiful kind of internal causal integrity? I suggest that resources for such an approach may be found in the field of 'biosemiotics'.

The potential for developing a semiotic approach to biology is suggested by the observation that many biological processes seem to have something to do with what may be variously referred to as coding, signalling, or information. Another way of putting this is that the biological sciences often, and usually uncritically, apply terminology that is implicitly semiotic. Biosemioticians are interested in investigating the basis of such implicitly semiotic terms.[26] The most obvious, though controversial, example is that of the genetic 'code'. Life, at least the life as we know it on Earth, makes use of the capacity of sequences of nucleotide bases in deoxyribonucleic acid (DNA) to contain the 'information' necessary for joining up amino acids in the correct sequence to make a functional protein. There is no necessary chemical relation between the triplets of nucleotide bases that correspond to each of the amino acids from which proteins are made,[27] hence the tendency to think of the relation as one of representation. At the other end of the biological scale, semiotics may contribute to understanding the basis of human distinctiveness. It has long been

---

[26] For example, M. Anderson et al., "A Semiotic Perspective on the Sciences: Steps toward a New Paradigm," *Semiotica* 52, no. 1/2 (1984); Claus Emmeche and Jesper Hoffmeyer, "From Language to Nature: The Semiotic Metaphor in Biology," *Semiotica* 84, no. 1/2 (1991); Jesper Hoffmeyer and Claus Emmeche, "Code-Duality and the Semiotics of Nature," in *On Semiotic Modelling*, ed. M. Anderson and F. Merrell (Berlin: Mouton de Gruyter, 1992); J. Eder and H. Rembold, "Biosemiotics – a Paradigm of Biology," *Naturwissenschaften* 79 (1992); Jesper Hoffmeyer, *Signs of Meaning in the Universe* (Bloomington: Indiana University Press, 1996); Anton Markoš, *Readers of the Book of Life: Contextualizing Developmental Evolutionary Biology* (Oxford: Oxford University Press, 2002); Marcello Barbieri, *The Organic Codes: An Introduction to Semantic Biology* (Cambridge: Cambridge University Press, 2003); Wendy Wheeler, *The Whole Creature: Complexity, Biosemiotics and the Evolution of Culture* (London: Lawrence and Wishart, 2006).

[27] However, the genetic 'code' is not entirely arbitrary because the origin and evolution of the relation between codons and their corresponding amino acids was almost certainly influenced by various chemical constraints. See, for example, Robin D. Knight and Laura F. Landweber, "The Early Evolution of the Genetic Code," *Cell* 101 (2000); Robin D. Knight, Stephen J. Freeland, and Laura F. Landweber, "Rewiring the Keyboard: Evolvability of the Genetic Code," *Nature Reviews* 2 (2001).

recognized that our uniqueness may in some way rest on our capacity to use signs and signalling in particularly sophisticated ways, including the capacity to communicate by means of language.[28] That idea was a starting point for my own speculations about human origins in the previous chapter (§3.3). From a biosemiotic point of view, the evolutionary process consists of a growth in the extent and variety of the manifestations of the generic processes of 'semiosis'.[29]

On the face of it, then, semiotics may offer the kind of resource that might be helpful as the basis for a theological response to the apparent implications of evolutionary theory. We may be willing to accept that other runs of the evolutionary story might not have resulted in the evolution of creatures in the exact form of *Homo sapiens*, and yet affirm that the emergence of creatures with richly developed capacities for sign-making and sign-interpretation was a likely outcome of the process. A highly developed capability for using signs is more plausible than 'consciousness' as a generically definable, and theologically relevant, outcome of evolution. Furthermore, such a capacity may be understood as a natural development from earlier and simpler manifestations of sign-use. On this view humans are genuinely distinctive, yet our distinctiveness is in continuity with, and deeply rooted in, the rest of the living world.

The idea that some kind of semiotic continuity might offer the basis of a theology of nature is not without precedent. For example, Jürgen Moltmann's theological response to the current ecological crisis includes a call for the "humanization of nature" (the recognition that 'subjectivity' is an emergent property of complex open natural systems) and a call for the "naturalization of the human being" (acknowledgement that the human being is one of nature's products).[30] Accordingly, in his account of the place of humanity in nature, Moltmann chooses to depart from the instincts of much modern philosophical and theological anthropology and ask, first, what humans have *in common* with (rather than what distinguishes them from) other creatures.[31] "Every glance at the creation accounts in the Old Testament," Moltmann reminds us, "makes it clear first of all that the

---

[28] Terrence Deacon, *The Symbolic Species* (Harmondsworth: Penguin, 1997).
[29] Hoffmeyer, *Signs of Meaning*.
[30] Jürgen Moltmann, *God in Creation: An Ecological Doctrine of Creation*, trans. Margaret Kohl (London: SCM Press, 1985), 50–51.
[31] Ibid., 185.

human being is one creature among others".[32] In the accounts of the first two chapters of Genesis this is reflected in the fact that humans are formed from the earth (Gen. 2:7) and, like animals, depend on breathing air (Gen. 1:30; cf. 2:7) and are called to be fruitful and multiply (Gen. 1:22; cf. 1.28). What distinguishes humans from animals is that humans are given the (inherently semiotic) responsibility of giving the animals their names (Gen. 2:19). In seeking a framework within which to develop a theology of nature in a way that incorporates insights from the sciences and the humanities, it is significant that Moltmann tentatively proposes what he calls a "hermeneutical" theory of evolution.[33] His sketch of this has resonances with the biosemiotic perspective.[34] Thus he declares himself to be, "trying to comprehend the evolutionary cosmos itself as an irreversible, communicating system open to the future....Evolution only becomes possible through the reproduction and growing communication of the open systems".[35] He goes on to suggest that:

> The recognizable trends to communication towards every side, and the thrusts towards permanent self-transcendence in all open systems, are signs of the presence of God's Spirit in the world, and reactions to that presence.[36]

Suppose, then, that biosemiotics turns out to offer a plausible general philosophy of nature which may be adopted as the basis of a theological understanding of the continuity – and discontinuity – of humans with the rest of the living world. If such a response to the implications of evolutionary biology seems attractive then one might choose to leave the matter there. An account would be given of how biological evolution involves the emergence of increasingly sophisticated ways of interpreting the world, of creating representations, of communicating with other organisms, culminating (at least from our Earth-bound perspective) in the remarkable semiotic capabilities of human beings – including language and art. Theologically one might say that the distinctiveness of human beings lies in our capacity to

---

[32] Ibid., 186–89.
[33] Ibid., 198.
[34] Cf. Ibid., 347, note 22.
[35] Ibid., 204.
[36] Ibid., 206. Interestingly, in view of the hypothesis I shall be exploring in Chapter 5, Moltmann adds, "This is what was already meant by the ancient doctrine of the *vestigia Dei*".

use representations (often referred to as 'symbols' though, as argued in §3.3.1, the everyday use of that term can lead to some confusion). Although the precise kind of semiotic capacity that characterizes human ways of living might be a *contingent* outcome of the evolutionary process, the emergence of some such generic semiotic capability might plausibly be regarded as likely. The *continuity* of biological evolution would, on this account, be understood (at least in part) as a continuity of semiotic capabilities. Such capabilities would be regarded as natural products of the evolutionary process, not requiring the postulation of any vitalistic or supernatural forces or otherwise violating the casual *integrity* of nature. The themes of continuity, contingency and integrity might thus be affirmed as genuinely reflecting something theologically significant about the constitution of the created order.

The possibility of developing an account along the lines sketched above seems to offer a promising line of inquiry in response to the irritations of doubt prompted by attempting to make sense of Christian theology in the light of Darwinian evolutionary biology. In pursuing an inquiry along those lines, however, I came to suspect, further, that semiotics might offer opportunities for a rather deeper and more specific engagement with some of the themes and ideas that have shaped the Christian theological tradition. Some of the outcomes of those investigations have been the subject of the preceding chapters and will be pursued further in the remainder of the book. In particular, in the following chapter I shall combine Peirce's evolutionary cosmology with the theological resources offered by my semiotic model of the Trinity to propose a new theology of nature according to which the triadic patterns of creaturely semiosis may be understood as 'vestiges of the Trinity in creation'. This will be a theology of nature, therefore, that goes beyond the minimal kind of theological appropriation of biosemiotics just mentioned above.

Whether biosemiotics is to be appropriated as a general resource for thinking about nature, or, more ambitiously, as part of a full-blown Trinitarian theology of creation, as I shall attempt in Chapter 5, a major obstacle must be faced. The obstacle is that there is a significant body of opinion within the philosophy of biology that doubts whether the biosemiotic perspective is scientifically and philosophically sustainable. Sceptics argue that applying the terminology of signs, meanings and interpretations to biological systems at the cellular and sub-cellular level is nothing more than convenient shorthand

for what are, in fact, merely mechanistic (non-semiotic) processes. According to this view, most semiotic terminology in biology could be entirely replaced with physical and chemical explanations. For example, the movement in theoretical biology known as Developmental Systems Theory has shown convincingly that the idea that DNA is a repository of 'information' rests on unjustified assumptions about the uniqueness of the genome as a developmental resource.[37] Developmental systems theorists prefer to regard DNA as one developmental resource among others, and many resist applying informational or semiotic terminology to any of the molecular interactions that together make up the complex web of cellular systems. The use of informational metaphors in biology, according to this view, arose in a particular historical context (mid-twentieth century scientific interest in the military applications of information and control systems) and does not necessarily pick out anything of fundamental importance about biological organization.[38]

Clarifying the question of what is meant by biological 'information' is a particularly pressing problem in the context of the field of origin of life research (on which more in §4.2.2). It is highly tempting to think of polymers such as DNA and RNA as 'informational' molecules. The origin of template-based polymer replication may then naturally be thought of as, in some sense, the origin of biological 'information'. Much confusion has arisen in the literature through assuming that such 'information' or 'coding' must be the earliest, or even an early, step in the emergence of life, or that such representation is the minimum criterion for semiosis.[39] Thinking about the 'informational' content of nucleotide sequences is often accompanied by analysis, or the implied possibility of analysis, in terms of Shannon's

---

[37] For example, Susan Oyama, Paul E. Griffiths, and Russell D. Gray, "Introduction: What Is Developmental Systems Theory?," in *Cycles of Contingency: Developmental Systems and Evolution*, ed. Susan Oyama, Paul E. Griffiths, and Russell D. Gray (Cambridge: MIT Press, 2001), 5; Susan Oyama, *The Ontogeny of Information: Developmental Systems and Evolution* (1985; 2nd Edition revised and expanded with a forward by Richard C. Lewontin, Durham: Duke University Press, 2000); P. E. Griffiths and R. D. Gray, "Developmental Systems and Evolutionary Explanation," *The Journal of Philosophy* XCI, no. No. 6 (1994).

[38] Lily E. Kay, *Who Wrote the Book of Life?: A History of the Genetic Code* (Stanford: Stanford University Press, 2000).

[39] For example, see Bernd-Olaf Küppers, *Information and the Origin of Life* (Cambridge: MIT Press, 1990); T. D. Schneider, "Evolution of Biological Information," *Nucleic Acids Research* 28 (2000).

mathematical concept of information.[40] Briefly, the mathematical theory of information provides a way of measuring the amount by which our 'uncertainty' is decreased if we receive a 'signal' consisting of a sequence of 'symbols'. The reduction in uncertainty refers to the comparison of the signal 'received' with the number of possible signals that could have been 'sent'. For example, if a device can produce 2 possible symbols (0 or 1), each of which is equally likely, we do not start with a very high degree of uncertainty: we already know that the signal will be either a 1 or a 0. When the device produces a symbol (say, a 1), our uncertainty is reduced, but not from a very high level. (If there is noise in the system then our reduction of uncertainty will not be to zero because even if we receive a 1 we cannot be sure that a 1 was sent: the mathematical theory of information can also deal with this problem of noise.) If the device can produce any one of 4 symbols (e.g., ACTG – the 'letters' of the DNA 'code'), and again supposing that each is equally likely, then when we know which symbol actually occurs at any particular site the quantitative reduction in our uncertainty will be greater than if only two symbols had been possible at that site. The units of the measure of information provided by the mathematical theory of information are 'bits'. A single 'letter' in the two-symbol example (0s and 1s) carries 1 bit of information (reduces our uncertainty by 2 bits per symbol); a single letter in the 4-letter DNA alphabet carries 2 bits of information.[41]

The technological ramifications of the discovery of a quantitative measure of information lie at the heart of the revolution in information and communication technology that has occurred in the last half-century or so. But, crucially, *the mathematical theory of communication has nothing to do with meaning*: the mathematical quantification of information has no semantic dimension and is therefore distinct

---

[40] Claude E. Shannon, "The Mathematical Theory of Communication," in *The Mathematical Theory of Communication*, ed. Claude E. Shannon and Warren Weaver (1949; reprint, Urbana: University of Illinois Press, 1964).

[41] Strictly speaking, the units are 'bits' if the measure of information is calculated in base 2 logarithms. If there are N equally probable symbols then the amount of information (reduction in uncertainty) given by a signal consisting of one symbol is Log_2 (N): that is, the logarithm in base 2 of N. In the examples above, the information given by a 1 (where a 1 or 0 were equiprobable) is Log_2 (2) = 1 bit. The information content of a single 'letter' of the DNA – knowing, for example that the next letter is an A, not C, T, or G) is Log_2 (4) = 2 bits (not 4 bits, as one might expect given that there are 4 possible letters).

from the semiotic concept.[42] Part of the reason why, in spite of this, it is tempting to assume that the mathematical theory of information is likely to bear directly on the problem of the origin of life is that the mathematics of communication theory is closely analogous to the mathematics of entropy.[43] The seductiveness of the apparent link between information and thermodynamics arises from the fact that, as Schrödinger recognized in *What is Life*?, the nature of living things must somehow be connected with their ability to avoid the tendency to increase in entropy by decaying towards a state of thermodynamic equilibrium, or death.[44] What organisms characteristically do is to decrease their own entropy while increasing that of their surroundings (and, thereby, of the whole system of organism and environment together). As Schrödinger put it, organisms live by feeding on 'negative entropy'. Some authors do not hesitate to suggest a direct connection between this negentropic property of living things and a growth of the informational content of biological macromolecules.[45] However, the mathematical parallels between communication theory and thermodynamics arise because Shannon-information and entropy are both measures of aspects of disorderliness or unpredictability; the mathematical similarities reflect analogies rather than homologies between the things that each measures.[46]

In summary, the philosophical critique of naïve uses of information terminology in biology is, in my opinion, important and

---

[42] See, for example, William F. Harms, "The Use of Information Theory in Epistemology," *Philosophy of Science* 65 (1998): 497, Ilya Prigogine, *The End of Certainty: Time, Chaos and the New Laws of Nature* (New York: The Free Press, 1997), 24–26.

[43] Reporting an interview with Shannon in 1961, Myron Tribus records that: "I asked Shannon what he had thought about when he had finally confirmed his famous measure. Shannon replied: My greatest concern was what to call it. I thought of calling it 'information,' but the word was overly used, so I decided to call it 'uncertainty'. When I discussed it with John von Neumann, he had a better idea. Von Neumann told me, 'You should call it entropy for two reasons. In the first place your uncertainty function has been used in statistical mechanics under that name, so it already has a name. In the second place, and more important, no one knows what entropy really is, so in a debate you will always have the advantage'". Myron Tribus and Edward C. McIrvine, "Energy and Information," *Scientific American* 225 (1971): 180.

[44] Erwin Schrödinger, *What Is Life?: The Physical Aspect of the Living Cell. In: What Is Life? & Mind and Matter* (1944; Cambridge: Cambridge University Press, 1967), 75.

[45] See, for example, Daniel R. Brooks and E. O. Wiley, *Evolution as Entropy: Toward a Unified Theory of Biology*, 2nd ed. (Chicago: University of Chicago Press, 1988), 33.

[46] Harms, *Use of Information Theory*, 479.

well-founded. Moreover, direct association of the mathematical theory of communication with the thermodynamic aspects of the origin of life on the grounds of the similarity of the mathematical functions involved is misguided. The question remains, however, whether attempts to eliminate all implicitly semiotic concepts from theoretical biology might risk throwing the baby out with the bathwater. Might there be something important about the role of semiotic processes in biology that is hinted at in, but not fully grasped by, the common but uncritical use of terms such as 'coding', 'signalling', and 'information'? In particular, has the seductiveness of the mathematical theory of information diverted attention from the possible relevance of semantic information – 'meaning' information – to the origin of life?

The challenge in effect posed by critics of the biosemiotic programme is to show how semiotic concepts offer any explanatory advantages over purely mechanistic accounts. The remainder of this chapter constitutes a response to that challenge.

4.2   *Interpretation, Teleology, and the Origin of Life*

4.2.1   *Defining Purpose and Interpretation*

Peirce's theory of signs underwent several phases of development from its beginnings in the 1860s to its mature form in the first decade of the twentieth century. The final piece in the jigsaw of his semiotic theory was his recognition that interpretation is always end-directed (§1.3.1). I now turn to consider this aspect of Peirce's semiotics in more detail. The reason for doing so at this stage is that, as T. L. Short has shown, the teleological aspect of interpretation is what makes Peirce's account of semiosis irreducible to explanation in terms merely of mechanistic causation. Peirce's mature semiotics thus offers the basis of a response to the sceptical voices in theoretical biology who doubt the necessity or coherence of the biosemiotic approach on the grounds that semiotic terminology is merely a gloss on what are, in fact, merely mechanistic processes.

To understand Short's argument for the irreducibility of interpretation to mechanistic explanations it is necessary to understand his account of 'teleological' kinds of explanation. Short argues that Darwin's concept of natural selection re-introduced a form of teleological

explanation that can be traced to Aristotle.[47] One of Aristotle's examples is that of a man walking for his health.[48] Health is the 'end' – the 'final cause' – which explains why the man is walking. According to Short, the reason why the man is walking cannot fully be given only by reference to mechanistic explanation. Mechanistic explanations relate particular initial conditions to particular outcomes by reference to general laws (which may be deterministic or probabilistic).[49] For example, the *particular* trajectory of an atom may be explained in terms of the *particular* mass and velocity of the atom that struck it moments earlier. In contrast, Aristotle's concept of a final cause is that of a *general type of outcome* which explains why there are outcomes of that type, or why there are things which give rise to outcomes of that type.[50] Health is a *general* type of outcome. It is general because it could be instantiated in various ways and by various means (by swimming rather than walking, and so on). At one level of analysis, then, the man is walking *because* his goal is health. This 'end', this final cause, is not particular but general. Although other levels of analysis will be able to give mechanistic accounts of why the man is walking (because his muscles are contracting in response to neural impulses, and so on), the explanation of his walking will be incomplete if it does not include reference to the relevant general type of outcome, namely, health. Importantly, this account of final causation excludes many of the kinds of example commonly taken to illustrate the concept of teleological explanation. For example, reference to the man's *desire* to be healthy does not offer a teleological form of explanation of why he is walking; his desire is a particular thing that precedes, and plays a causal role in, his walking.[51]

Darwin is often held responsible for eliminating the concept of 'purpose' from biological explanations. According to the above account, however, Darwin's concept of natural selection is a form of

---

[47] T. L. Short, "Darwin's Concept of Final Cause: Neither New nor Trivial," *Biology and Philosophy* 17, no. 3 (2002).

[48] Ibid., 326.

[49] Ibid., 334. This does not commit one to any specific view of what 'mechanisms' lie behind 'mechanistic' explanations, which is an issue on which ideas have changed over time. T. L. Short, *Peirce's Theory of Signs* (Cambridge: Cambridge University Press, 2007), 94–98.

[50] Short, *Darwin's Concept of Final Cause*, 327.

[51] ———, *Peirce's Theory of Signs*, 104.

inherently teleological explanation of the (irreducible) Aristotelian kind. To borrow Elliott Sober's terms, natural selection is always *selection of* a feature where that feature is *selected for* its having a certain general type of effect or outcome.[52] My colleague, Christopher Southgate, and I have suggested that Short's account of teleological explanation can be formally expressed as follows:

A purpose P is:

- a general type of outcome or effect
- which explains the existence of something, Q,
- because Q is selected for its having effects of general type P.
- (where P is not constitutively related to Q)[53]

In terms of the example of 'health': Health is a purpose (P) which explains why the man is walking (Q) because the man has selected walking (i.e., has chosen to walk) for its having effects of general type P (health).

Short's account of Peirce's mature theory of interpretation builds on this naturalized account of purpose. In order to do so, Short introduces a distinction between 'existing for a purpose' and 'acting for a purpose'.[54] A feature of an organism that has been selected by natural selection may be said to *exist for a purpose* because selection (including but not restricted to natural selection) is always selection for a possible general type of outcome. The particular details of the heart have been selected by natural selection because they have a gen-

---

[52] ———, "Darwin's Concept of Final Cause," 329, footnote 5; cf. Elliott Sober, *The Nature of Selection* (Chicago: Chicago University Press, 1984).

[53] The requirement that P be not 'constitutively' related to Q is necessary in order to exclude so-called 'self-organising' systems (more accurately, systems in which order arises spontaneously) from the definition of purpose. For example, Bénard cells (Q) exist because in certain circumstances that organization of molecular motions has the general type of effect (P) of dissipating energy. This general type of effect, P, explains the selection of Q from among the other possible patterns of molecular motion that might arise randomly. But one would not normally say that dissipation of energy is the 'purpose' of a Bénard cell because P is constitutively related to Q. If the Bénard cell did not dissipate energy then it would not be a Bénard cell. Short's way of putting this would be to say that in this example Q (the Bénard cell) is selected for its effect P (dissipation of energy), but not as a means to an end. In other words, in self-organising systems there is no distinction between means and ends. In contrast, walking (Q) would still be walking even if it were not good for you (i.e., if it did not lead to health, P). cf. Short, *Peirce's Theory of Signs*, 135.

[54] Ibid., 111.

eral type of effect, namely, that they facilitate the pumping of blood. There are numerous ways that an organism might evolve a capacity to circulate body fluid. The explanation of the existence of the particular features of the heart cannot be given only by reference to another particular or set of particulars, but must include reference to a general type of outcome for which it was selected: that is, the general property of pumping blood.[55]

Something can *exist for a purpose* or *have* a purpose by virtue of a process of selection that is itself purposeless (such as natural selection). In contrast, Short argues, an organism *acts for a purpose* if it performs an action which can be subject to modification if it fails to achieve that purpose. For example, a bear paws at a log in response to a certain odour. Its purpose in doing so is to find nutritious grubs. If it fails to find grubs in the log it may resume random wandering until it encounters another odour and begins to paw at a different log. In this process of seeking nutritious grubs the bear is *acting for a purpose*, namely, the purpose (general type of outcome) of obtaining nutrition.[56] According to Short, interpretation is intrinsic to, and can only be understood in the context of, purposeful action. The bear interprets the odour as a sign of grubs, this interpretation being intrinsically related to the purposeful action of searching for grubs. And because purposeful actions have a purpose, and that purpose is necessarily something general rather than a particular, so explanations of purposeful actions (and hence also of interpretations) cannot be reduced to mechanistic explanations.

Southgate and I have proposed a formal definition of interpretation that, while based closely on Short's teleological account of interpretation, modifies his account in some important respects.[57] We identify two particular problems with Short's approach. First, we do not accept that an action must be subject to potential modification in the face of failure in order to count as an interpretation. I shall return to this point below. Second, Short's close identification of 'acting for a purpose' with interpretation overlooks the fact that not all changes of state for which there has been selection (whether natural selection or conscious selection) are interpretative responses. In order to clarify

---

[55] Ibid.
[56] Ibid., 153–59.
[57] Robinson and Southgate, *A General Definition of Interpretation*.

this, Southgate and I suggest a concept intermediate between Short's *existing for a purpose* (e.g., a static structure selected for a function) and *acting for a purpose* (which Short requires must be subject to correction by the organism in the event of error). The intermediate concept may be called *occurring for a purpose* or a *change of state for a purpose*. A change of state that occurs for a purpose (i.e., has been selected by virtue of its leading to an outcome of a general type, P) is not necessarily an interpretation. To stick with the example of the heart introduced above, the leaflets of the aortic valve change state by opening during systole to allow blood to pass out of the heart. The aortic valve does not *act for a purpose* (in Short's sense); rather, opening of the valve is a change of state that *occurs for a purpose*.

The definition of interpretation that Southgate and I have proposed is based on the idea that all interpretations are changes of state which occur for a purpose in response to something. In order to count as an interpretation, fulfilment of the purpose of the interpretation depends on there being a relation between that 'something' and something else. That is, the change of state in question occurs in response to a sign, but the fulfilment of the purpose in question depends on a relation between the sign and its object. Of course a formal definition of interpretation must not presuppose any of the concepts (such as interpretation, sign, object) that it is intended to explain. Hence we define interpretation as follows:

> A response, R, of an entity is a proper interpretation of X as a sign of O if and only if:
> 1. The entity has a property, Q, of undergoing change of state ΔS in response to some X, where R is any actual instance of such a response;
> 2. (a) R tends to increase the probability of an effect of a certain general type, P;
>   (b) This tendency of R depends on a relation between X and O, where the occurrence of X does not necessarily imply the occurrence of O;
> 3. The property Q has been selected for the tendency of instances of R to actualize effects of general type P.

According to our account, only when a change of state occurs in response to something, X, *and all the other criteria in the definition above are met*, does a 'change of state for a purpose' count as an interpretation.

(2b) The tendency of R to actualise effects of type P depends on a relation between X and O

Object O

(2a) R tends to increase the probability of an effect of general type P

Purpose P

Sign X → Response R

(1) Q = property of responding to X with change of state R

(3) Q has been selected for the tendency of R to actualise effects of general type P
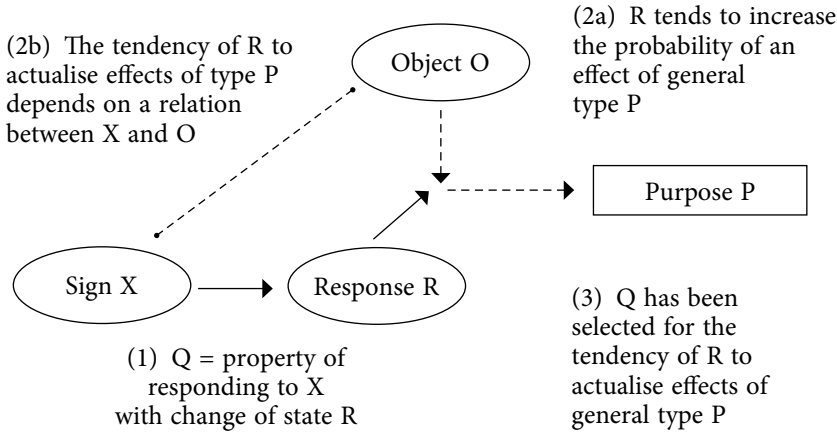
Figure 2: Diagrammatic representation of Robinson-Southgate definition of interpretation

The definition may be illustrated by the following hypothetical scenario of a 'hungry' amoeba.[58] Suppose that X is a gradient of some chemical attractant; Q is the property of the amoeba of responding to the attractant gradient by changing state (ΔS) to the state of crawling up the gradient; R is a particular instance of the amoeba responding to an attractant gradient by changing state (ΔS) to swim up the gradient; O is the presence of a bacterium in the direction of the attractant gradient; and P is the outcome of the amoeba 'having a meal' (i.e., the general possible type of effect of obtaining nutrition). According to our definition, R properly interprets X as a sign of O because:

> 1. The amoeba has a property, Q, of responding to something X (attractant gradient) by undergoing change of state ΔS (starting to crawl in the direction of the attractant gradient), where R is any actual instance of the crawling response to an attractant gradient;

---

[58] A standard illustration of interpretative capabilities in microbes has been a 'hungry' bacterium (Stuart A. Kauffman, *Investigations*, Oxford: Oxford University Press, 2000, 111). However, the best-studied form of bacterial chemotaxis involves a biased random walk arising from reduction of the rate of tumbling (which results in random redirection) when attractant concentration is increasing. Although this could in principle be shown to fit the definition of interpretation the involvement of a negative rather than positive response to attractant slightly complicates the example as an illustration.

2. (a) R (responding to attractant gradient by crawling up the gradient) tends to increase the probability of an effect of a certain general type, P (the amoeba having a meal); (b) this tendency of R depends on a (fallible) relation between X (an attractant gradient) and O (the presence of a bacterium).

3. The property Q (the propensity for the crawling response) has been selected (by natural selection) for the tendency of instances of R (instances of the crawling response) to actualize effects of general type P (the amoeba having a meal).

Let us briefly consider some aspects of the above definition under the headings of its relation to Peirce's semiotic triad, its generality, which derives in part from the breadth of the concept of selection, the light it sheds on different kinds of misinterpretation, and the way in which it distinguishes interpretations from other kinds of (non-interpretative) change of state.

Relation to Peirce's semiotic triad

The terms X, O and R in the definition correspond, in Peirce's terminology, to the sign, object and interpretant respectively. The sign, X, may be a qualisign, sinsign or legisign. In the example above, the attractant gradient is a sinsign: a singularly occurring event that signifies.[59] The interpretant, R, may be a feeling, an action, or a thought. In the case of the crawling response of the amoeba, the interpretant is an action, an 'energetic' interpretant. The relation between the sign, X, and object, O, may be iconic, indexical, or symbolic. In the case of the chemical gradient the relation is indexical because it is causally related to the presence of the bacterium.

It is worth recalling here that these various possible ways in which the definition of interpretation may be met are manifestations of the ever-interpenetrating reality of the categories. Hence X may manifest Firstness (if a qualisign), Secondness (if a sinsign), or Thirdness (if a legisign). The relation between X and O may manifest Firstness (if iconic), Secondness (if indexical), or Thirdness (if symbolic). The interpretative response R may manifest Firstness (if a feeling), Secondness (if an action), or Thirdness (if a thought).

---

[59] The fact that it is a kind of event that will have multiple instances does not undermine its identification as a sinsign. The gradient is not the very quality of the bacterium itself, hence not a qualisign, and it is not produced by the bacterium according to a rule for the purpose of signalling its presence to the amoeba, hence not a legisign.

Kinds of selection and the generality of the definition

Our definition retains (in Clause 3) Short's account of the role of selection in interpretation. It is important to note that 'selection' is used here in a general sense. In the simplest or most primitive cases it refers to Darwinian natural selection. That is the sense that applies in the example of the hungry amoeba, and it is the sense that is relevant when applying the definition to simple proto-biotic entities as a way of approaching the problem of the origin of life (to be discussed below, §4.2.2). In more complex organisms, however, selection of the relevant kind of responsiveness may be by other mechanisms. For example, in humans (and perhaps other animals) some interpretative responses are selected at a conscious level. A consequence is that the mechanism of selection of Q may itself involve one or more interpretative steps, a fact that does not itself undermine the definition. Indeed, a significant evolutionary step would have been the emergence of creatures that are able to 'choose' appropriate responses to environmental circumstances on the basis of 'internally' formed signs, by means of which they may evaluate the possible consequences of different actions.[60] The formal continuity between the various manifestations of the phenomenon of interpretation arises from the generality of the definition; the vast range of different kinds of event that may count as interpretations arises partly from the different mechanisms by which the selection of Q can occur.

In terms of Peirce's categories, the importance of selection and the inherently teleological nature of interpretation are manifestations of Thirdness. This is because selection is always for general types of outcome, and generality is a form of Thirdness. The 'general' is what mediates between particular instances, bringing them under a unifying class or description. That general types of outcome have real causal efficacy in the world (as in their role in explaining why Aristotle's man is walking or the hungry amoeba is crawling) is a reflection of the reality and irreducibility of Thirdness.

Misinterpretation and corrigibility

The possibility of misinterpretation is generally held to be necessary for any coherent account of representation.[61] According to a teleological

---

[60] Robinson and Southgate, "*A General Definition of Interpretation*, 179.
[61] K. Sterelny and P. E. Griffiths, *Sex and Death: An Introduction to the Philosophy of Biology* (Chicago: University of Chicago Press, 1999), 104.

account of interpretation, misinterpretation may be understood in terms of certain ways in which an interpretative response may fail to achieve its purpose. Our definition illustrates the fact that misinterpretation can arise at different levels.[62] For example, the amoeba may respond to a chemical gradient which has not, in fact, been caused by the presence of a bacterium. If the chemical concerned is the same as that normally produced by the relevant kind of bacteria but, in this instance, has arisen for some other reason than the presence of a bacterium, then this may be termed an R-level error. Such a misinterpretation arises at the level of Clause 2b of the definition: the relation between X and O on which the success of the interpretative response depends happens not to hold in this instance. On the other hand, if the bacterium responds to a chemical gradient of a substance that is similar to that often produced by bacteria but never actually produced by them then this may be termed a Q-level error. Such a misinterpretation arises at the level of Clause 3 of the definition, the selection of the relevant property of responsiveness of the interpreting entity.[63]

Short holds that interpretation must be part of an action that is correctable by the organism, or at least potentially so, if it fails its purpose.[64] In contrast, Southgate and I contend that it is the fallibility of the response R (owing to the possibility of a disjunction between X and its expected or hoped-for relation to O in clause 2b) that is relevant, rather than the potential for correction (by the individual organism). A response can be fallible without being (immediately)

---

[62] Note that the Robinson-Southgate definition offers a definition of what it is for R to be a 'proper' interpretant of X. We do not thereby imply that a proper interpretation is an infallible interpretation. Indeed, our distinction between proper and improper interpretations is intended to clarify the various possible types of misinterpretation. The term 'proper' here refers to it 'belonging to' (being a property of) X that it may be correctly interpreted as a sign of O. Our terminology therefore shares the same etymological root as Ruth Millikan's 'proper functions', though it is not directly related to or derived from Millikan's usage. Cf. Ruth Garrett Millikan, *Language, Thought and Other Biological Categories* (Cambridge: MIT Press, 1984).

[63] Q level errors do not strictly fall under our definition of interpretation, which is restricted to what we have called 'proper' interpretations. Q-level errors are 'improper' interpretations, though they may best be understood with reference to the concept of a 'proper' interpretation. The advantage of excluding improper interpretations from the basic definition of interpretation is that the definition would become problematic if it included kinds of responsiveness which could not in fact have been selected for their having an actual tendency to produce outcomes of the general type (P) in question.

[64] Cf. Short, *Peirce's Theory of Signs*, 157.

correctable. The bear may spend its last reserves of energy pawing at a log that smells of grubs, though all the grubs have already been eaten. If this misinterpretation results in the bear starving to death it will not be correctable (by this bear), but it will still have been a misinterpretation. Our difference from Short on this point probably arises from our different starting points. Short's interest stems from the question of the nature and origin of intentionality of the sort evidenced in animal behaviour, and is part of his project of giving a naturalistic account of human intentionality. Short does not wish, as we do, to be able to apply the definition at the level of fundamental cellular and sub-cellular biological systems, and to very simple proto-biotic entities.[65]

Distinguishing interpretation from non-interpretative changes of state
Imagine a thermostat consisting of a bi-metallic strip incorporated within a suitable device and adjusted so as to switch off a heater if the room temperature rises above 20°C. The application of our definition may be illustrated by considering the question, does such a device perform interpretations?

Consider, first, the bi-metallic strip in isolation. The basis of the thermostat's operation is that, when the temperature rises, one side of the strip expands more than the other, causing the strip to bend. Does this bending of the strip in response to the change in temperature amount to an interpretation of the thermal environment? In other words, if the strip had simply formed by some natural process and were lying on the ground, would its movement in response to temperature changes constitute an interpretation? In terms of our definition, Clause 1 is fulfilled: The strip has a property, Q, of undergoing change of state ΔS (bending) in response to something, X (temperature above 20°C), where R is any actual instance of such a response. However, Clause 3 of the definition is not fulfilled because the temperature-responsiveness of this naturally-occurring bi-metallic strip has not been selected for any tendency of the response, R, to

---

[65] In this respect our approach is consistent with Colapietro's account of the implications of Peirce's semiotic approach to the self. According to Colapietro, Peirce's approach implies a "hierarchy of minds", at the most rudimentary level of which, purposeful actions and interpretations would be entirely bound by "instinct" and not open to self-control or correction in the event of error. Vincent M. Colapietro, *Peirce's Approach to the Self: A Semiotic Perspective on Human Subjectivity* (New York: State University of New York Press, 1989), 55, 110–11.

produce effects of a general type, P; in this case, regulation of the room temperature.[66]

Clause 3 would, in contrast, be fulfilled when the strip (whether naturally occurring or specially designed) is incorporated as part of a functioning thermostat. In that case the responsiveness of the strip has been selected for the general type of effect, P, of keeping the room temperature below 20°C. Even a functioning thermostat, however, does not yet meet our definition of interpretation because the bi-metallic strip responds directly to the room temperature, so there is no disjunction between X and O which would allow for a fallible relation between the two (clause 2b). Suppose, though, that the thermostat is situated in a draughty corner of the room. The temperature in that corner has a relationship to, but is not always a precise indicator of, the temperature in the rest of the room (so X does not necessarily imply O, fulfilling clause 2b). Nevertheless, for reasons of convenience, or due to some other practical constraint, the owner of the thermostat still chooses to locate the thermostat in that corner. We might further suppose that the general type of effect (P) with which I am concerned is the health of my house-plants (so that R, a response to the temperature of the room, is not identical to P; clause 2a). With these additional postulates the response of the thermostat meets the definition of interpretation. Importantly, though, it only does so because it functions within a wider context contrived by a conscious purposeful agent. In that context the thermostat may reasonably be held to be performing an interpretative task on behalf of the human agent.

The fact that inanimate devices can be designed by agents to perform surrogate interpretations does not undermine the hypothesis that the origin of interpretation was an important step in the emergence of life. From the point of view of the problem of the origin of life the question is how a simple interpretative entity could have arisen without the outside intervention of a purposeful agent. That is the question to which I now turn.

---

[66] Note that the bending of the strip might be taken to be a sign of the ambient temperature by an interpreter who knew something about the physics of metals. That is different to the question I am addressing here, which is whether the movement of the strip is itself an interpretation of the ambient temperature.

4.2.2   *Interpretation and the Emergence of Life*

All living things on Earth are descended from a common ancestor, referred to as the Last Common Ancestor (LCA), an entity that lived around 3500 million years ago.[67] We can deduce from present day organisms that the LCA must have been a micro-organism with a biochemistry similar to present-day bacteria. In particular, the LCA used the relation between nucleic acids and proteins that is familiar in the organisms we can study today. Proteins, which are composed of sequences of amino-acids, perform catalytic functions. Nucleic acids, DNA or RNA, consist of sequences of nucleotide bases and specify (via the genetic 'code') the sequences of amino-acids needed to make functional proteins. This of course raises the ultimate chicken-and-egg problem. Which came first, proteins or DNA? Without DNA it is not possible to synthesize the specific amino-acid sequences needed to make functional proteins. And without certain functional proteins the DNA sequence cannot be utilized by the cell. An elegant and plausible solution to this problem emerged when it was found that certain RNA molecules are able to act as catalysts. Hence the notion of an 'RNA world': the possibility of the earliest living systems having used RNA molecules for both functional (catalytic) and 'coding' purposes. A further problem, however, is that the nucleotide building-blocks of RNA molecules are not easy to synthesize under plausible pre-biotic conditions.[68] Various hypotheses have therefore been proposed to explain how the RNA-world could itself have piggy-backed on chemically more primitive polymer systems.[69]

In general terms, the RNA-world hypothesis tends to fit most closely with what has been called the 'replication-first' model of the origin of life. According to this view, the main hurdle for any pre-biotic system, and the central problem for origin of life research, is the emergence of molecules capable of accurate replication. Without such replication, the entities in question would neither persist in the environment or be capable of evolving by natural selection. The other main approach may be called the 'metabolism-first' model. According

---

[67] Leslie E. Orgel, "The Origin of Biological Information," in *Life's Origin: The Beginnings of Biological Information*, ed. J. William Schopf (Berkeley: University of California Press, 2002), 141.

[68] Ibid., 150.

[69] Ibid., 151–53.

to this model, which builds on recent advances in understanding 'self-organizing' systems, fairly complex metabolic networks may have evolved before the appearance of any kind of template-based (genetic) replication machinery.[70] An objection to the metabolism-first model is that, while supported by elegant computer modelling, it is short of actual empirical examples of such networks of chemical reactions. A third model, perhaps best thought of as complementary to the other two, focuses on possible mechanisms by which enclosure of essential constituents of the system could have arisen. There has been significant interest, for example, in the properties of various kinds of lipid vesicle,[71] with some impressive results having been obtained in attempts to achieve nucleic acid uptake and replication within such vesicles.[72]

The contribution that the semiotic approach can make to origin of life research is to encourage yet another way of looking at the problem. The three main approaches noted above each focus on a key aspect of living things: reproduction, metabolism, and localization. The semiotic approach suggests that a further cardinal feature of life may be a capacity to interpret the environment (internal or external). It is generally recognized that living things respond to their environments.[73] Curiously, however, this characteristic does not seem to have provided a focus for origin of life research in the same way as have reproduction, metabolism and localization. One might speculate about why this is the case. The problem of replication is perhaps attractive because of the immediate possibilities of approaching the problem through the chemistry of polymers such as DNA and RNA. The metabolism-first approach has attracted interest largely because of the surprising and elegant discoveries that have emerged from the study of complex dynamic systems. The localization paradigm is perhaps attractive because it is so empirically accessible: vesicles form

---

[70] Christian De Duve, *Vital Dust: The Origin and Evolution of Life on Earth* (New York: Basic Books, 1995), 15–54; Kauffman, *At Home in the Universe*, 31–69.

[71] See, for example, D. W. Deamer, "The First Living Systems: A Bioenergetic Perspective," *Microbiology and Molecular Biology Reviews*, no. June (1997); H. J. Morowitz, *The Beginnings of Cellular Life: Metabolism Recapitulates Biogenesis* (New Haven: Yale University Press, 1992).

[72] S. S. Mansy and J. W. Szostak, "Reconstructing the Emergence of Cellular Life through the Synthesis of Model Protocells," *Cold Spring Harbour Symposia On Quantitative Biology,* 74: 47–54 (2009).

[73] See, for example, John Oró, "Historical Understanding of Life's Beginnings," in *Life's Origin: The Beginnings of Biological Evolution*, ed. William J. Schopf (Berkeley: University of California Press, 2002), 8.

spontaneously; current research efforts concentrate on whether anything interesting can be done with the vesicles once they have formed.[74] In contrast, the notion of the responsiveness of an entity to its environment may not appear to be so empirically accessible: what sort of response is envisaged; to what feature of the environment would such a response have been made? Moreover, unless environmental responsiveness is recognized as (in some instances) a semiotic property that can only be fully understood in the light of a certain kind of philosophical analysis, perhaps it does not appear to be theoretically interesting.

The semiotic approach may change this situation by suggesting that a capacity to make fallible interpretative responses is a theoretically non-trivial aspect of biological function. The fallibility of such responses is crucial. An interpretation is always a kind of wager. The costs of misinterpretation are (in some circumstances) worth risking because of the proportionately greater gains that arise from a successful interpretation. The semiotic perspective on the origin of life asks, then, what kind of entity first (unconsciously) took the risk of making a misinterpretation? And, further, did the emergence of such a capacity play an early role in the emergence of life from proto-biotic systems? In what order did reproduction, metabolism, localization, and interpretation emerge?

Southgate and I have suggested that our definition may encourage a new way of thinking about the scientific problem of the emergence of life and generate empirically testable hypotheses in the field of origin of life research.[75] Our hypothesis, in short, is that the acquisition of a capacity to interpret an environment is a *necessary* condition for identifying an entity as living and was a key step in the emergence of life. We do not go so far as to suggest that interpretation is a *sufficient* condition for life because we recognize that in order to unequivocally identify an entity as living, several other conditions must also be met. For that reason we acknowledge that the concept of the 'emergence' of life has advantages over the phrase 'origin of life' in the sense that the latter may misleadingly suggest that the threshold

---

[74] See, for example, Pier Luigi Luisi, Tereza Pereira de Souza, and Pasquale Stano, "Vesicle Behavior: In Search of Explanations," *Journal of Physical Chemistry, B.* 112, no. 46 (2008).

[75] Robinson and Southgate, *A General Definition of Interpretation*.

between non-life and life was crossed in a single event.[76] Neverthe-less, our position is distinguishable from those biosemioticians who regard some primitive form of semiosis as a widespread property of non-living entities and processes.[77]

The logical requirements for an entity capable of responding to its environment in a way that meets the definition of interpretation developed in §4.2.1 are quite simple. First, the entity must be able to exist in two states, say S1 and S2. Second, the environment must be non-constant or non-homogenous such that, with respect to the organism there can be (at least) two environmental states, E1 and E2. Third, for at least one of the environments there must be some advantage to the entity of being in one of its available states rather than the other. For example, if the environmental state is E2 it may be advantageous for the entity to be in state S2. Fourth, the entity must be responsive to some feature of the environment such that if the environment changes (e.g., from E1 to E2) the entity changes state in a way that is advantageous (from S1 to S2). It is perhaps not difficult to see, even in this highly conceptualized scheme, that the possibilities of making such an advantageous response to the envi-ronmental state, E2, will be much greater if the response does not have to be directly induced by the particular feature of that environ-ment that determines that the state in question, S2, is advantageous. In terms of our definition, the entity will be an interpretative entity if it makes a response R (changing state from S1 to S2) in response to some sign, X, where X is correlated with O (the object, environmen-tal state E2). If, as in this example, entity state S2 is advantageous (in terms of survival or reproduction – either of which are general types of outcome, P) provided that the environmental state is E2, and if the tendency for the entity to respond to X by changing from S1 to S2 has been selected (by natural selection) for its effect of producing these outcomes because of a correlation of X with E2, then the response R will have interpreted X as a sign of O.

---

[76] Bruce Weber, "Emergence of Life," *Zygon: Journal of Religion and Science* 42, no. 4 (2007).

[77] John Deely, "Semiotics and Biosemiotics: Are Sign-Science and Life Science Coextensive?," in *Biosemiotics: The Semiotic Web 1991*, ed. T. A. Sebeok and J. Umiker-Sebeok (Berlin: Mouton de Gruyter, 1992); Stanley N. Salthe, "Meaning in Nature: Placing Biosemiotics within Pansemiotics," in *Biosemiotics: Information, Codes and Signs in Living Systems*, ed. Marcello Barbieri (New York: Nova Science Publishers, 2007).

Our co-investigator Niles Lehman and his doctoral student Brian Larson at Portland State University, Oregon, have been attempting to synthesize an RNA molecule with characteristics that would meet our definition of interpretation.[78] Such a molecule would be capable of catalyzing the ligation of two RNA fragments to make copies of itself. That is, the molecule would act as a self-replicating ribozyme. Suppose that such self-replication is enhanced by the presence of a particular metal ion, such as magnesium (Mg^{2+}). The molecular basis of this would be a conformational change in the ribozyme that occurs in response to binding the metal ion. Suppose, further, that the presence of Mg^{2+} is often, though not invariably, associated with the presence of conditions favourable to replication (for example, low pH and the presence of substrate). This might occur in a system in which substrate molecules were periodically arriving in pulses arising from some cyclical physical process, and where the presence of Mg^{2+} ions was correlated with, but not invariably linked to, the cycles of that process (perhaps through some distinct but connected cyclical process). In that case the self-reproducing ribozyme would fulfil the requirements for a minimal molecular semiotic entity according to our definition.[79] It would be capable of interpreting the presence of Mg^{2+} ions as a sign of the presence of conditions favourable to replication. Furthermore, it would be vulnerable to making misinterpretations in that, in the presence of conditions unfavourable to replication any binding to Mg^{2+} ions (if present) would increase the rate of hydrolytic destruction of ribozyme molecules.

The semiotic approach to the origin of life sketched above has the potential to influence the direction of origin of life research at two different levels. One level is primarily empirical, in that it would encourage researchers to focus on asking, what is the simplest kind of entity that could make adaptive responses to changes in environmen-

---

[78] L. T. Lui et al., *Environment-Specific State-Changes in Simple Protobiotic Systems: Investigation of the Role of Interpretative Responsiveness in the Origin of Life* (poster presented at American Academy for the Advancement of Science, San Diego, California, 21 February 2010).

[79] Of course there are numerous molecules in biological cells which have properties of conformational change in response to their immediate environment and which thereby serve what are often referred to as 'signalling' functions within the cell as part of a wider system. The question, from the point of view of origin of life research, is whether a molecule with such a property can, in a very carefully defined sense, interpret its environment without being part of a more complex entity.

tal states? Another way of putting this is to say that it may encourage those working with any of the currently predominant models to ask, how might the acquisition of environmental responsiveness arise from, and be an advantage to, entities possessing the properties I am primarily interested in (whether that be replication, metabolism, enclosure, and so on)?[80] At this 'empirical' level, any results that point to the possible importance of the acquisition of the property of responsiveness to the environment (including, for example, Lehman's attempt to synthesize an interpretative ribozyme) would not, in itself, constitute a proof that life can only be explained by reference to irreducibly semiotic concepts. It would still be open to sceptics to argue that nothing other than mechanistic causation is involved in such responsiveness, though they would have to acknowledge that the idea of investigating such responsiveness arose (at least in part) from semiotic considerations.

The second level at which the approach outlined above may stimulate new avenues of research is more theoretical and metaphysical. Our definition of interpretation gives rise to a very specific conceptual account of the properties required in order for an entity to be recognized as interpreting its environment. Other theoretical approaches to semiotics will give rise to different accounts, and these differences have the potential (at least in principle) to lead to different ways of focusing empirical origin of life research. For example, one approach to biosemiosis, with which our approach is in competition, understands semiosis as emergent from a particular kind of system dynamics and places much less emphasis on environmental responsiveness as necessary for the most primitive kind of semiosis.[81] Another competing approach regards semiosis as present even in relatively simple physical systems, in which case the origin of life may be regarded as depending on the emergence of a new kind of semiosis rather than reflecting the first flowering of semiosis itself.[82] Finally, as already noted above, Short disputes that Peircean semiotics can be genera-

---

[80] Christopher Southgate and Andrew Robinson, "Interpretation and the Origin of Life," *Zygon: Journal of Religion and Science* 45, no. 2 (2010).

[81] See, Kalevi Kull et al., "Theses on Biosemiotics: The Saka Convention," *Biological Theory* 4, no. 2 (2009); cf. Andrew Robinson, Christopher Southgate, and Terrence Deacon, "Discussion of the Conceptual Basis of Biosemiotics," *Zygon: Journal of Religion and Science* 45, no. 2 (2010).

[82] S. N. Salthe, "Naturalizing Semiotics," *Semiotica* 120, no. 3/4 (1998); Salthe, *Meaning in Nature*.

tively applied to simple organisms at all, regarding it instead as a capacity only of higher animals.[83] Again, of course, it will be possible for the sceptic to hold that such semiotic theorizing is (ultimately) a dispensable way of thinking about living things. However, if theoretical debates within the field of semiotics turn out to have tangible connections with choices about how to proceed with empirical origin of life studies then it will be increasingly difficult, I suggest, to hold that semiotics has nothing to contribute to biology.

4.2.3   *Biosemiotics vs. Teleosemantics*

The definition of interpretation introduced above (§4.2.1) raises some questions that, not coincidentally, have some parallels with the programme of 'teleosemantics'. I finish this chapter with some brief remarks on those parallels.

Teleosemantics is a branch of the philosophy of mind that shares some areas of interest with the philosophy of biology. Teleosemanticists attempt to offer a naturalistic account of mental representation by analysing the relation between representation and (variously formulated) notions of purpose or function.[84] Short suggests that Ruth Millikan, whose *Language, Thought and Other Biological Categories* initiated the teleosemantic programme,[85] has, in the process, independently developed a theory of representation that has remarkable similarities to that of Peirce.[86] Indeed, according to Short, in teleosemantics "we witness contemporary philosophers gradually groping their way back to the position Peirce formulated from about 1902 to 1907".[87] It is worth noting three key differences between current teleosemantic theories and Peirce's theory of signs, all of which are evident in Millikan's more recent formulation of her hypothesis.[88] First, although Millikan emphasizes the continuity between "biological" and "personal" purposes,"[89]

---

[83] Short, *Peirce's Theory of Signs*, 177.
[84] Graham Macdonald and David Papineau, eds., *Teleosemantics: New Philosophical Essays* (Oxford: Clarendon Press, 2006), 1. See also André Ariew, Robert Cummins, and Mark Perlman, eds., *Functions: New Essays in the Philosophy of Psychology and Biology* (Oxford: Oxford University Press, 2002).
[85] Millikan, *Language*.
[86] Short, *Peirce's Theory of Signs*, 303.
[87] Ibid., 298.
[88] Ruth Garrett Millikan, *Varieties of Meaning: The 2002 Jean Nicod Lectures* (Cambridge: MIT Press, 2004).
[89] Ibid., Chapter 1.

and although she recognizes that what such purposes have in common is something to do with having their origin in "some form of selection,"[90] she does not recognize that what makes purposes irreducible to mechanistic causation is that selection is always for a *general possible type of outcome*. Without such a recognition the teleosemantic programme lacks the justification, presented in §4.2.1, for regarding interpretations of signs as irreducible to mechanistic explanations.[91]

Second, Millikan describes teleosemantic theories as "piggy back" theories, by which she means that they "must ride on more basic theories of representation, perhaps causal theories, or picture theories, or informational theories, or some combination of these".[92] What teleosemantics adds to such theories, according to Millikan, is the stipulation that "for your true representation to be an *intentional* representation [in the sense of having *aboutness*], it must be a function or purpose of the system that produced it to make representations".[93] According to Millikan, then, teleosemantics is not in itself a theory of representation. In contrast, Peirce's semiotics offers a theory of representation that (as argued in §4.2.1) piggy-backs on the concept of function or purpose. In other words, although teleosemantics shares with Peirce's semiotics an emphasis on the relation between representation and function, the two programmes conceive this relation differently.

Third, and related to the second point, teleosemantics tends to focus on the 'content' of representations, the basis of which, according to Millikan (as just noted), is not an intrinsic part of the teleosemantic hypothesis. This leaves further work for the teleosemanticist to do in order to account for such content. The Peircean approach set out in §4.2.1 does not face such a problem because it does not attempt to account for the 'content' of representations. Instead it asks, what are the criteria for a change of state of an entity or organism to count as an interpretation? In that case there is no need to ask what is the 'content' of the sign, X. The question, rather, is whether there is a relation between X and O of a kind that makes responding

---

[90] Ibid., 13.

[91] Cf. Short, *Peirce's Theory of Signs*, 300–01. Whether teleosemantics is concerned about whether representation is irreducible in this sense, and if so whether it has a satisfactory alternative account of such irreducibility, is another matter.

[92] Millikan, *Varieties of Meaning*, 66.

[93] Ibid., 67.

to X 'useful' to the entity or organism in the sense of increasing the probability of actualizing the relevant general type of outcome, P.

In spite of these differences from Peircean semiotics, consideration of some standard examples from teleosemantics can help address some potential objections to the definition of interpretation that Southgate and I have proposed. We call the first of these issues the problem of the proximal P. Consider the example of the 'hungry amoeba'. In that example (§4.2.1) I described the purpose of the response to the attractant gradient as that of the amoeba "having a meal". But the purpose could equally have been expressed as obtaining nutrition, or as enhancing the chances of survival and reproduction. Obtaining nutrition is a more 'distal' purpose than that of ingesting food in the sense that ingesting food may or may not provide (a beneficial amount of) nutrition; enhancing the chances of survival and reproduction is likewise a more 'distal' purpose than obtaining nutrition. The behaviour of 'magnetotactic' bacteria, a standard example from teleosemantics, illustrates the problem.[94] Such bacteria contain 'magnetosomes': internal magnets which cause the bacteria to become aligned with the Earth's magnetic field. The internal arrangement of the magnetosomes with respect to the longitudinal axis of these bacteria is such that when the bacteria propel themselves forward, provided they are far from the equator, they move towards deeper water. It is thought that the function of magnetotaxis is to direct the bacteria towards comparatively oxygen-free water and sediment. The orientation of magnetosomes in southern hemisphere magnetotactic bacteria is opposite to those in the northern hemisphere. If a southern hemisphere bacterium is transplanted into the North Atlantic it will swim upwards into a hostile oxygen-rich environment and die. The question arises, is such a displaced bacterium 'misrepresenting the world'?[95] On the one hand, it may be argued that the bacterium responds, R, to the Earth's magnetic field (the sign, X), as a sign of the presence of the direction of an oxygen-poor environment (the object, O), and that when the magnetic field is reversed (in the northern hemisphere) this response turns out to be a misinterpretation. An objection, however, is that as well as

---

[94] Fred Dretske, *Knowledge and the Flow of Information* (Oxford: Blackwell, 1981), 26.

[95] Mark Perlman, "Pagan Teleology: Adaptational Role and the Philosophy of Mind," in *Functions: New Essays in the Philosophy of Psychology and Biology*, ed. André Ariew, Robert Cummins, and Mark Perlman (Oxford: Oxford University Press, 2002), 273.

directing the bacterium towards oxygen-free water it might be said that the magnetosome's function is to point towards magnetic north. On that reading the orientation of the transplanted southern hemisphere bacterium is not a misrepresentation (since the bacterium still orientates itself northwards), even though this results in its death. The problem, in short, is that if there is no limit to how 'proximally' the function assigned to the property in question can be expressed then the possibility of misinterpretation appears to collapse.

Our definition of interpretation is not vulnerable to this criticism because a limit is placed on the proximity of P by the requirement that P must be distinguishable from the interpretative response R (clause 2a). Teleosemantics misses this point because of its focus, in effect, on the 'content' of X rather than on what makes R an interpretation of X. On our account, in the magnetosome example the response, R, is the orientation of the bacterium towards magnetic north. We may say that this serves the purpose, P, of orienting the bacterium towards an oxygen-poor environment. To identify P as orientation of the bacterium towards magnetic north would be to collapse P into R. As Mark Perlman puts it, "if you are willing to go a little proximal, why not go all the way?"[96] The answer is that the proximity of P is limited by the necessity of distinguishing the purpose P (finding an appropriate oxygen-free environment) from the response, R (orientation towards magnetic North).

The fact that the purpose of an interpretative response can be expressed in terms of a range of Ps gives rise to another issue familiar to teleosemanticists: the indeterminacy of the object, O. Another standard example from teleosemantics is that of a toad snapping up passing bugs with its tongue. According to Millikan, if the toad snaps at a lead pellet thrown in the air nearby then it misinterprets the pellet as a bug.[97] However, as Jerry Fodor points out, one might equally well say that the toad interprets its retinal images as signs of bugs-or-pellets (or even little-black-moving-things), in which case snapping at a pellet should not be held to be a misinterpretation.[98] Nevertheless, snapping at little-black-moving-things may well be adaptive: indeed,

---

[96] Ibid., 283.
[97] Ruth Millikan, "Thoughts without Laws: Cognitive Science without Content," *Philosophical Review* 95 (1986).
[98] Jerry Fodor, *A Theory of Content and Other Essays* (Cambridge: MIT Press, 1990), 71.

if the toad had to be *certain*, before it snapped, that a little-black-moving-thing was a bug then it would probably starve. As Fodor puts it, "Darwin cares how many flies you eat, but not what description you eat them under".[99]

Does the problem of the indeterminacy of the object undermine our definition? Recall again the example of the crawling amoeba. The indeterminacy of the object, O, may be understood in terms of the chain of purposes, P, from 'proximal' to 'distal'. If P is the relatively proximal purpose, 'having a meal', then the object, O, might simply be 'a bacterium' or just 'food'. If P is 'obtaining nutrition' then O would be 'a bacterium with such and such nutrient value'. If P is enhanced survival then O is 'a nutritious bacterium properly digested in the absence of any other factors that might impair the well-being of the amoeba'. A similar hierarchy of Os could be formulated for the magnetotactic bacteria and the snapping toad, each O corresponding to a different P (ranging from proximal to distal).

In order to understand why this does not undermine the definition it is important to distinguish (a) the conditions under which a propensity to make a certain response may be adaptive, from (b) whether individual instances of such a response count as misinterpretations. The toad may snap in response to retinal images of little-black-moving-things even if these are rarely flies. The propensity to make such a snapping response has been selected because it is successful often enough to increase the chances of survival and reproduction. However, an individual instance in which the toad snaps in the absence of a fly is a misinterpretation *when considered in terms of whether or not that particular instance of response R gives rise to an outcome of the relevant general type, P.* Adaptive success and epistemological success are therefore not conflated,[100] because Q (the propensity to make a response to something X) is distinguished from R (individual instances of such a response). A toad may have evolved a propensity (Q) to respond to little-black-moving-things in its field of vision. If, in an individual instance, R, the little-black-moving-thing is in fact a lead pellet then the response may be considered a correct interpretation with respect to the purpose of coordinating snapping with the presence of little-black-moving-things, a coordination which in the

---

[99] Ibid., 73.
[100] Perlman, "Pagan Teleology," 272.

long run increases the chances of obtaining nutrition (compared to the effect of snapping randomly). Snapping at a lead pellet may, however, be considered a misinterpretation with respect to the purpose of obtaining nutrition in this particular instance considered in isolation. What Fodor has called the disjunction problem (the problem that any of the putatively interpretative scenarios in question can be reformulated in such a way as to make misinterpretation impossible) is thus avoided.[101]

   Admittedly it is the case that an implication of this account is that whether a particular instance of a response R is a misinterpretation depends on how proximal a P one is interested in. By crawling up an attractant gradient the amoeba may correctly interpret the gradient as a sign of a bacterium in that direction, but misinterpret it as a sign of a nutritious (rather than toxic) bacterium, or as a sign that the bacterium is within crawling distance, and so on. However, this pluralism about the status of the response R with respect to a chain of purposes, P, is not fatal to the definition. Indeed, it fits with one's everyday experience of interpretation – which is no bad thing for a definition that is intended to cover all possible interpretations from the interpretative responses of bacteria (or even simpler entities / organisms) to human interpreters.

<p style="text-align:center">∗   ∗   ∗</p>

In this chapter I have introduced the field of biosemiotics as a potential resource for a theology of nature whose aim, in part, would be to give a theological account of creation that is consistent with the best scientific insights of evolutionary biology (§§4.1.1–4.1.2). Acknowledging, however, that semiotic approaches to biology often meet with scepticism from some sections of the community of theoretical biologists, I set out to show that Peircean semiotics has the potential to contribute to empirical and theoretical aspects of biological research. In §4.2.1 I introduced a formal definition of interpretation drawing on Peirce's teleological understanding of semiosis. In §4.2.2 I showed how this might fruitfully be applied to the scientific problem of the origin of life, and in §4.2.3 I explored some aspects of the definition further in the context of parallel problems in the field of teleosemantics.

---

[101] Cf. Short, *Peirce's Theory of Signs*, 297.

The upshot from the point of view of the wider argument of this book is, I suggest, that biosemiotics offers a potentially fruitful philosophical framework from which to approach some fundamental biological problems. Hence biosemiotics, specifically the Peircean approach to understanding the teleological basis of interpretation, appears to be a legitimate resource for the task of developing a scientifically informed theology of nature. That is the task to which I turn in following chapter.

VESTIGES OF THE TRINITY IN CREATION

The word "God," so "capitalized" (as we Americans say), is *the* definable proper name, signifying *Ens necessarium*: in my belief Really creator of all three Universes of Experience.

C. S. Peirce, 1908[1]

This book is, among other things, a contribution to Christian thinking about God as Trinity. Narrowly understood, the doctrine of the Trinity concerns the 'intra-Trinitarian' relations of the Father, Son, and Holy Spirit: the oneness and the three-ness of God. More broadly, Trinitarian thought stems from reflection on the human person Jesus of Nazareth, and therefore necessarily requires and incorporates thinking about anthropology and Christology. Even more generally, Trinitarian thought concerns the relation between God and the world. In this chapter I explore the relation between my semiotic model of the Trinity and Christian thinking about creation. In doing so I shall be proposing a new Trinitarian theology of nature, an approach to the Christian doctrine of creation that draws on and develops the idea that it may be possible to find 'vestiges of the Trinity' in the created order.

The overarching metaphor that will help the reader to keep track of the relatively complex structure of the argument to be developed in the following sections is that of a rope, or plait, braided from three separate but related strands.[2] The first strand in the plait is primarily a scientific one, stemming originally from reflection on evolutionary and theoretical biology. In Chapter 4 I set out a way of thinking about the challenges posed by Darwinian evolutionary biology to

---

[1] Charles S. Peirce, *The Essential Peirce: Selected Philosophical Writings, Volume 2 (1893–1913)*, edited by the Peirce Edition Project, (Bloomington: Indiana University Press, 1998), 434.

[2] There are two main methods of rope making. One method is simply to twist the fibres together. The other, braiding, involves the same process as that commonly used to plait together bunches of hair. Recall that Peirce used the metaphor of knowledge as a cable with many fibres (EP 1.29; see §1.4.3).

Christian theology, and I suggested that a 'biosemiotic' approach might offer a general basis for a theology of nature capable of responding to these challenges. However, the value of the biosemiotic approach in this regard would be seriously weakened if it turned out to offer a merely metaphorical description of living things. The second half of Chapter 4 was therefore devoted to developing a philosophically robust definition of interpretation and showing how this might give rise to empirically testable scientific hypotheses in the field of origin of life research. The scientific strand of my argument will be developed further in this chapter by exploring how the themes of continuity, contingency and naturalism – originally identified in the context of reflection on evolutionary biology in the previous chapter – reflect fundamental aspects of the evolving cosmos.

The second strand of my argument is constituted by Peirce's philosophy, particularly his categories, his semiotics, and his theory of inquiry. I began this book by setting out some of the key elements of this strand. I shall extend the Peircean strand in the present chapter by introducing Peirce's evolutionary cosmology, a speculative scheme into which all the other elements of his philosophy are implicitly incorporated, and according to which the categories of Firstness, Secondness, and Thirdness may be regarded as underpinning the whole process of cosmic evolution.

The third strand is the theological one. In Chapter 2 I argued that Peirce's triadic metaphysics and semiotics may be in some sense analogous to the 'inner' Triune being of God. I suggested, further, that the semiotic model may help to clarify some of the perennial conceptual problems in Trinitarian thought. I went on, in Chapter 3, to develop the model by proposing a semiotic approach to the Incarnation and to scientific and theological anthropology. This theological strand will be extended in this chapter by introducing the idea that creation is not only an act of the Father but also of the Son and the Spirit, and by developing a Peircean version of the concept of 'vestiges of the Trinity in creation'.

The structure of this chapter is as follows. I begin by sketching some biographical background to Peirce's development of his philosophical scheme into an evolutionary cosmology (§5.1.1). I then introduce (§5.1.2) Peirce's concepts of evolution by chance and evolution by necessity, which correspond respectively to his categories of

Firstness and Secondness, and his idea of 'agapastic' evolution, evolutionary love, which is grounded in his category of Thirdness.

In §5.2 I undertake the process of braiding together the scientific, philosophical and theological strands identified above. In the first twist of the plait I connect the scientific theme of evolutionary continuity with Peirce's philosophical conception of evolutionary Thirdness (§5.2.1). I suggest that the growth of semiotic capabilities is a manifestation of these continuities, and that, according to this perspective, the distinctiveness of human being can be understood as deeply embedded within the rest of nature. I go on to suggest that the capacity of some creatures to choose their own purposes, a capacity that depends on a certain kind of semiotic capability, is the basis of the emergence of *agape* love in the cosmos. The second twist of the plait connects the theme of evolutionary contingency and the scientific recognition of the importance of indeterminacies in nature with Peirce's philosophical concept of evolution by chance, 'tychastic evolution' (§5.2.2). In each of these first two twists of the braid the corresponding aspects of the theological strand, relating respectively to the Father and the Spirit, remain somewhat in the background. The third iteration of the braiding process brings together the scientific theme of ontological naturalism, Peirce's philosophical concept of 'anancastic' evolution, and the theological notion of creation *ex nihilo* (§5.2.3). It is here that the theological strand comes to the fore; specifically, I introduce the concept of the Trinitarian mediation of creation, focussing at this stage on the creative role of the Word.

In §5.3 I propose that the features of the cosmos identified in the scientific strand and systematized in the philosophical strand may be understood in the light of the theological strand as 'vestiges of the Trinity in creation'. I begin by examining some of the logically possible relations between the world and God in terms of the concepts of 'analogy', 'likeness', and 'vestige' (§5.3.1). I again initially focus specifically on the role of the Word, the Second Person of the Trinity, as the ground of the otherness of the world from God and of all instances of otherness within the created order. I then extend the argument to include the work of the Spirit, and to suggest how the Word and Spirit may be understood to have distinctive, but complementary, roles in creation (§5.3.2). Finally, I explore some positive theological reasons for entertaining this 'strong' version of the vestiges hypothesis (§5.3.3).

A word of warning is necessary. My proposal as a whole, and the argument I develop in this chapter in particular, will raise very proper concerns about my approach to questions of theological method. Am I, for example, attempting to revive a discredited form of natural theology? Do I not realize that grand metaphysical schemes have had their day? Such questions are legitimate and important. However, in order to respond to them adequately without obscuring the shape of the proposal itself I shall defer that discussion until the following chapter.

5.1   *Peirce's Evolutionary Cosmology*

5.1.1   *Biographical Context: Vocation and Destitution*

The year 1892 was a turning point in Peirce's life. On 31 Dec 1891 he had lost his position at the United States Coast and Geodetic Survey, then the foremost scientific institution in America, forced to resign after what appears to have been an unfair appraisal of his work. Peirce had been employed (nominally) full time at the Survey for 20 years, having accepted the post when hopes of a permanent appointment in Philosophy at Harvard were fading. His work at the Survey involved the use of pendulums to measure the force of gravity at different locations with the aim of determining the precise shape of the Earth. While working at the Survey he had also accepted a lectureship at the newly established Johns Hopkins University in Baltimore. At Johns Hopkins Peirce taught courses in philosophy, logic, mathematics and psychology, and co-authored a book that made an important contribution to symbolic logic. Unfortunately, Peirce did not endear himself to all of his colleagues. In April 1883, two days after receiving the final decree of his divorce from his first wife, Zina, he married Juliette Annette Froissy, with whom he had been publicly having an affair for several years.[3] Peirce's behaviour was considered scandalous, perhaps not so much for his having kept a mistress, but for undermining the sanctity of marriage by marrying her. When the Johns Hopkins authorities became aware of the situation Peirce was

---

[3] Kenneth Laine Ketner, *His Glassy Essence: An Autobiography of Charles Sanders Peirce* (Nashville: Vanderbilt University Press, 1998), 279–92.

dismissed from his lectureship, in effect ending any future possibility of a permanent academic appointment in any university.[4]

In the meantime his position at the Coastal Survey had also become vulnerable. The Survey had allowed him to pursue his other interests, including the lectureship at Johns Hopkins, on the unofficial basis that his salary, which was determined by the Treasury rather than directly by the Survey, was lower than was commensurate with his scientific achievements. In 1885 a congressional committee exposed corruption at the Survey, and although Peirce was not among those sacked he was (with some justification) accused of extravagance and failure to produce sufficient research. The Treasury cut the Survey's budget and Peirce was now denied the help of an assistant to make the laborious calculations necessary to analyse the results of his pendulum research. He eventually submitted a long-overdue report of his experiments in 1889; the work received a critical (and probably unfair) assessment and Peirce was eventually forced to resign.[5]

In spite of the loss of his main source of income Peirce persisted in the misguided belief that recognition and fortune were just around the corner. In 1888 Charles and Juliette had moved to Milford, Pennsylvania, where they had bought a 140-acre farm, to which they had added nearly 2000 acres of woodland the following year. Without Peirce's income from the Coast Survey the upkeep of the estate was now well beyond their means. Nevertheless, they proceeded with extensive improvements to the house, which they called Arisbe, with the intention of making it into a summer school for philosophy. This was just the first of numerous ill-fated money-making schemes with which Peirce became involved during the 1890s, as his life descended into chaos and poverty. Other ventures included the invention of a process for electrochemical bleaching, a scheme for providing cheap lighting using acetylene gas that was intended to rival Thomas Edison's electric light bulb, a proposal for a hydroelectric generator (which was subsequently built on the site proposed by Peirce, but without benefiting him), and the design of a suspension bridge to

---

[4] Joseph Brent, *Charles Sanders Peirce: A Life*, Revised and Enlarged Edition. (Bloomington: Indiana University Press, 1998), 164. Brent suggests that doubts about Peirce's orthodoxy in matters of Christian faith also played an important part in influencing the University authorities, and that his alleged adultery may have in the end been the pretext rather than the ultimate cause of his dismissal.

[5] Ibid., 202.

span the Hudson River (where, 50 years later, the George Washington Bridge was built).

As his financial situation deteriorated Peirce was forced to live on loans and gifts from friends and relatives. Between 1895 and 1897, with Juliette ill, they lived as fugitives in New York, a warrant having been taken out for Peirce's arrest for non-payment of debts relating to work on the house. At times Peirce had so little money that he wandered the streets of New York for days and nights on end without food or sleep. By 1899, at the age of 60, the man who enjoyed the distinction of having written all of the Century Dictionary's definitions for (amongst others) the terms relating to logic, philosophy, mathematics, mechanics and astronomy, was forced to accept a job organizing door-to-door sales of a hack encyclopaedia. As usual, the plan fell through.

All the while Peirce hoped in vain for a patron who would enable him systematically to set out his philosophy. As he put in his 1887–88 sketch *A Guess at the Riddle* (an outline of a book never written) his hope was:

> …to make a philosophy like that of Aristotle, that is to say, to outline a theory so comprehensive that, for a long time to come, the entire work of human reason, in philosophy of every school and kind, in mathematics, in psychology, in physical science, in history, in sociology, and in whatever other department there may be, shall appear as the filling up of its details. (EP 1.247)

In April 1892, four months after losing his job at the Coast Survey, Peirce had an apparently life-changing religious experience. When visiting St Thomas' Church in New York he felt unexpectedly compelled to receive Holy Communion.[6] Brent suggests that this experience shaped the way that Peirce thenceforth understood his life's calling. On the day of this experience Peirce wrote that he felt he had received a call that "seemed to promise me that I should bear a cross like death for the Master's sake, and he would give me the strength to bear it". In the 22 subsequent impoverished and chaotic years between the mystical experience and his death Peirce's philosophical legacy took shape not in the form of his unrealized dream of a philosophical *magnum opus* but, largely, in more than 80 000 hand-written

---

[6] Ibid., 209–12. The quotations below are from these pages.

unpublished pages. It was during these years that much of his semiotic theory was developed. Intriguingly, Brent ventures:

> I believe that, for Peirce, semeiotic should be understood, after his mystical experience, as the working out of how the real is both immanent and transcendent and of how the infinite speaker may be said to practice semeiosis, the action of signs, in creating our universe.

At the time of this experience Peirce was working on the third of a series of five articles for a new journal, *The Monist*.[7] In these articles he sets out the religiously-inclined evolutionary cosmology on which he had been increasingly engaged in the 1880s, possibly in part a response to the death of his father in 1880.[8] I shall focus on these articles in the following section (§5.1.2). It is notable that some commentators on Peirce have tended to a 'two-Peirce' view: on the one hand the tough minded empiricist, and on the other the somewhat unhinged speculative metaphysician. More recently a growing consensus has emerged among Peirce scholars according to which Peirce's evolutionary cosmology is understood as integral to his other philosophical work.[9] In this chapter I shall attempt a synthesis of Peirce's evolutionary cosmology (which implicitly incorporates the other major areas of his thought) and the tradition of Christian theology that understands God's creative work as an act of all three persons of the Trinity. I do not know whether Peirce would have approved of this synthesis, but I believe it to be consonant with Peirce's apparent self-understanding (according to Brent's account) of his God-given task in the latter part of his life.

5.1.2 *Three Modes of Evolution: Chance, Necessity and Love*

Peirce's interest in evolution can be traced to very shortly after the publication of Darwin's *Origin of Species*. After graduating from Harvard in 1859 Peirce had stayed on as a resident student, including a short spell studying fossil classification under the palaeontologist

---

[7] The articles in this series are: *The Architecture of Theories* (1891, EP 1.285–297), *The Doctrine of Necessity Examined* (1892, EP 1.298–311), *The Law of Mind* (1892, EP 1.312–333), *Man's Glassy Essence* (1892, EP 1.334–351) and *Evolutionary Love* (1893, EP 1.352–371).

[8] Brent, *Peirce*, 13.

[9] Carl R. Hausman, *Charles S. Peirce's Evolutionary Philosophy* (Cambridge: Cambridge University Press, 1993), xiii–xiv.

Louis Agassiz in the spring of 1860.[10] The *Origin of Species* had just appeared, and this brief training in palaeontology with one of Darwin's most prominent opponents is likely to have contributed to Peirce's subsequent interest in the evolutionary nature of the cosmos.

Two decades later Peirce began to turn his attention to developing his highly original evolutionary cosmology. Peirce's starting point was the question of the origins of order in the universe. Peirce held that our understanding of the world cannot rest on any reliable uniformity of nature (§1.4.1). In his 1878 paper *The Order of Nature* (EP 1.170–185) he had argued that the world lies somewhere between being a "chance-medley" and the product of uniform laws (EP 1.172). Peirce challenged the idea that all events must be susceptible of explanation in terms of immutable laws. In a fragmentary manuscript used for a lecture given in 1884, Peirce speculated: "May it not be that *chance*, in the Aristotelian sense, mere absence of cause, has to be admitted as having some slight place in the universe" (EP 1.217). He went on to propose that the laws of nature might themselves have an evolutionary explanation, in which case even nature's uniformities have come about at least in part though the operation of chance:

> Now the theories of evolution that have hitherto been set forth, at least to the very limited extent, I am sorry to confess it, with which I am familiar with them, while they do go to make it probable that organisms and worlds have taken their origin from a state of things indefinitely homogeneous, all suppose essentially the same basis of physical law to have been operative in every age of the universe. But I maintain that the postulate that things shall be explicable extends itself to *laws* as well as to states of things. We want a theory of the evolution of physical law. We ought to suppose that as we go back into the indefinite past not merely special laws but *law* itself is found to be less and less determinate. And how can that be if causation was always as rigidly necessary as it is now? (EP 1.218–219)

Peirce goes on to hint at how such chance effects might operate in the universe:

> The operation of chance, therefore, does show a definite tendency to bring about unlikely events by varying means under varying circumstances. I have no time to give more than a slight inkling of the consequences upon science and philosophy of attention to this principle. You have all heard of the dissipation of energy. It is found that in all trans-

---

10 Brent, *Peirce*, 60.

formations of energy a part is converted into heat and heat is always tending to equalize its temperature. The consequence is that the energy of the universe is tending by virtue of its necessary laws toward a death of the universe in which there shall be no force but heat and the temperature everywhere the same. This is a truly astounding result, and the most materialistic and the most anti-teleological conceivable. We may say that we know enough of the forces at work in the universe to know that there is none that can counteract this tendency away from every definite end but death. But although no force can counteract this tendency chance may and will have the opposite influence. Force is in the long run dissipative; chance is in the long run concentrative. The dissipation of energy by the regular laws of nature is by those very laws accompanied by circumstances more and more favourable to its reconcentration by chance. There must therefore be a point at which the two tendencies are balanced and that is no doubt the actual condition of the whole universe at the present time. (EP 1.221)

There are striking parallels between this speculation of Peirce's and our current understanding of the behaviour of complex "dissipative" systems.[11] It is also worth noting that Peirce's denial that there is necessarily any reliable uniformity in nature led him to express scepticism about basing theistic arguments on apparent order in the world. In his 1878 paper *The Probability of Induction* (EP 1.155–169), Peirce remarked that: "The relative probability of this or that arrangement of Nature is something which we should have a right to talk about if universes were as plenty as blackberries, if we could put a quantity of them in a bag, shake them up well, draw out a sample, and examine them to see what proportion of them had one arrangement and what proportion another" (EP 1.165). On balance, he regarded the ontological proof as a religiously more satisfactory argument than arguments from design. As he put it in *The Order of Nature*:

> …as soon as the Deity presents himself to either Anselm or Vacherot, and manifests his glorious attributes, whether it be in a vision of the night or day, either of them recognizes his adorable God, and sinks upon his knees at once; whereas the theologian of the evidences will first demand that the divine apparition shall identify himself, and only after having scrutinized his credentials and weighed the probabilities of

---

[11] It is significant that Ilya Prigogine and Isabelle Stengers, the former of whom was awarded the Nobel Prize for chemistry in 1977 for his work on non-equilibrium thermodynamics and the theory of dissipative structures, quote part of this passage, describing it as "remarkable". Ilya Prigogine and Isabelle Stengers, *Order out of Chaos: Man's New Dialogue with Nature* (London: Fontana, 1985), 302–03.

his being found among the totality of existences, will he finally render his circumspect homage. (EP 1.171)

In the 1890s Peirce developed his ideas about the role of chance and the origins of order into his fully-fledged evolutionary cosmology. It was while working on the third of the *Monist* articles that Peirce had the religious experience mentioned in the previous section. In the fifth of the articles, his 1893 paper *Evolutionary Love* (EP 1.352–371), Peirce suggested that there are, in principle, three possible types of evolution:

> Three modes of evolution have thus been brought before us; evolution by fortuitous variation, evolution by mechanical necessity, and evolution by creative love. We may term them *tychastic* evolution, or *tychasm, anancastic* evolution, or *anancasm*, and *agapastic* evolution, or *agapasm*. The doctrines which represent these as severally of principle importance, we may term *tychasticism, anacasticism*, and *agapasticism*. (EP 1.362)

Peirce identified Darwin as a proponent of the first kind of evolution, tychasticism: "Natural selection, as conceived by Darwin, is a mode of evolution in which the only positive agent of change in the whole passage from moner to man is fortuitous variation" (EP 1.358). According to Peirce, tychasticism alone presented an inadequate view of evolution:

> The vast majority of our contemporary naturalists hold the opinion that the true cause of those exquisite and marvellous adaptations of nature for which, when I was a boy, men used to extol the divine wisdom, is that creatures are so crowded together that those of them that happen to have the slightest advantage force those less pushing into situations unfavorable to multiplication or even kill them before they reach the age of reproduction....As Darwin puts it on his title-page, it is the struggle for existence; and he should have added for his motto: Every individual for himself, and the Devil take the hindmost! Jesus, in his Sermon on the Mount, expressed a different opinion. (EP 1.357)

Peirce was dissatisfied with what he perceived to be an implication of this view, namely, that evolution by chance would be driven primarily by negative selection against unfavourable variations rather than by any positive tendency inherent in the process:

> In the tychastic evolution progress is solely owing to the distribution of the napkin-hidden talent of the rejected servant among those not rejected, just as ruined gamesters leave their money on the table to

make those not yet ruined so much the richer. (EP 1.362; the parable alluded to is Luke 19:11–27)

Peirce regarded the second mode of evolution, anancasm, as the opposite of tychasm: "Diametrically opposed to evolution by chance, are those theories which attribute all progress to an inward necessary principle, or other form of necessity" (EP 1.359). This form of evolution "makes development go through certain phases, having its inevitable ebbs and flows, yet tending on the whole to a foreordained perfection" (EP 1.362–363). As I have already outlined, just such a response to evolutionary contingency is currently put forward by some who argue that, although the course of evolution has elements of chance, its overall direction and outcome are constrained within predictable limits (§4.1.2). However, Peirce dismisses the possibility of anancasticism fully accounting for the observed course of evolution because, "after all, living freedom is practically omitted from its method" (EP 1.363). As he had previously put it in a paper published in 1887, "As well as I can read the signs of the times, the doom of necessitarian metaphysics is sealed. The world has done with it" (CP 6.555).[12] The basis of Peirce's objection to the necessitarian overtones of anancasticism is made clear in a passage in the third of the *Monist* articles, his 1892 paper *The Law of Mind* (EP 1.312–333), in which he suggests that necessitarianism would rule out both the development of personality and the possibility of personal relationship with God:

> Were the ends of a person already explicit, there would be no room for development, for growth, for life; and consequently there would be no personality. The mere carrying out of predetermined purposes is mechanical. This remark has an application to the philosophy of religion. It is that a genuine evolutionary philosophy, that is, one that makes the principle of growth a primordial element of the universe, is so far from being antagonistic to the idea of a personal creator, that it is really inseparable from that idea; while a necessitarian religion is in an altogether false position and is destined to become disintegrated. But a pseudo-evolutionism which enthrones mechanical law above the

---

[12] As Peirce put it in the same article: "The endless variety of nature has not been created by law. It is not of the nature of uniformity to originate variation, nor of law to beget circumstance. When we gaze upon the multifariousness of nature, we are looking straight into the face of a living spontaneity. A day's ramble in the country ought to bring that home to us" (CP 6.553).

> principle of growth, is at once scientifically unsatisfactory, as giving no possible hint of how the universe has come about, and hostile to all hopes of personal relations to God. (EP 1.331)

Peirce, then, regarded "living freedom" as requiring something more than a balance of tychasm and anancasm (EP 1.363). But how are we to conceive of this characteristic of the cosmos that transcends both chance and necessity? A hint is given in the first of the *Monist* articles, *The Architecture of Theories* (EP 1.285–297), in which Peirce elaborates, in language which we might note in passing is suggestive of current notions of cosmogenesis from quantum fluctuations, on the sort of evolutionary philosophy that could be constructed from his categories:

> In the beginning, – infinitely remote, – there was a chaos of unpersonalised feeling, which being without connection or regularity would properly be without existence. This feeling, sporting here and there in pure arbitrariness, would have started the germ of a generalising tendency. Its other sportings would be evanescent, but this would have a growing virtue. Thus, the tendency to habit would be started; and from this with the other principles of evolution all the regularities of the universe would be evolved. (EP 1.297)

When Peirce refers to the taking of habits he is invoking an evolutionary increase in the intelligibility of the world – a manifestation of the growth of Thirdness. In §4.2.1 I explained how purposes may be understood as general types of outcome for which selection occurs. Generality is a manifestation of Thirdness (§1.2.2), so the emergence of purpose in the universe (including, for example, purposeful adaptive features of organisms for which selection has occurred) is a reflection of the evolutionary growth of Thirdness. The capacity of organisms to make interpretations involves a further step in the growth of Thirdness (§§4.2.1–4.2.2). With the emergence of such creatures the universe has become a realm of semiosis, with all the variety of further elaborations of Thirdness that is manifested in the growth of signs (§1.3).

As discussed in §1.3.1 and developed in §3.4.2, the ultimate interpretants of intellectual (conceptual) signs are the habits of behaviour to which they give rise. Thus Peirce's reference to the universe's "tendency to habit" is not a suggestion that evolution becomes progressively less open to novelty. As Robert Corrington puts it, for Peirce the concept of "habit-taking" was "not merely a blind behavioural

response" but "a general structure of intelligibility that can guide further forms of behaviour".[13] Peirce, then, regarded Thirdness as the additional requirement for the existence of genuine freedom, over and above any mere balance of chance (Firstness) and necessity (Secondness). Peirce's vision is of an evolving cosmos progressing from the initial formlessness and chaos of Firstness, achieving actuality and differentiation through Secondness, and moving towards the order and intelligibility of Thirdness. At the most basic cosmological level, Peirce expresses this in a way that sounds reminiscent of the process of natural selection: some states "will chance to take habits of persistency, and will get less and less liable to disappear; while those that fail to take such habits will fall out of existence" (CP 1.414).[14] In the fifth and last of the articles in the *Monist* series, *Evolutionary Love* (EP 1.352–371), Peirce makes the bold claim that, at the other end of the scale of habit-taking, the growth of Thirdness in the cosmos reaches fulfilment in the emergence of love as a causal reality in the universe:

> Everybody can see that the statement of St. John [that "God is love": 1 John 4:8] is the formula of an evolutionary philosophy, which teaches that growth only comes from love, from – I will not say self-*sacrifice*, but from the ardent impulse to fulfil another's highest impulse. Suppose, for example, that I have an idea that interests me. It is my creation. It is my creature…it is a little person. I love it; and I will sink myself in perfecting it. It is not by dealing out cold justice to the circle of my ideas that I can make them grow, but by cherishing and tending them as I would the flowers in my garden. The philosophy we draw from John's gospel is that this is the way mind develops; and as for the cosmos, only so far as it yet is mind, and so has life, is it capable of further evolution. Love, recognising the germs of loveliness in the hateful, gradually warms it into life, and makes it lovely. (EP 1.354)

Peirce argues that because evolution is partly driven by Thirdness, which is the basis of genuine personal freedom and of the possibility of personal relations, the evolutionary process must owe something to "a positive sympathy among the created springing from the conti-

---

[13] Robert S. Corrington, *An Introduction to C. S. Peirce: Philosopher, Semiotician and Ecstatic Naturalist* (Lanham: Rowman and Littlefield, 1993), 37.

[14] Quoted in Vincent M. Colapietro, *Peirce's Approach to the Self: A Semiotic Perspective on Human Subjectivity* (New York: State University of New York Press, 1989), 83.

nuity of mind" (EP 1.362). When evolution involves Thirdness it has the capacity to manifest "a vital freedom which is the breath of the spirit of love" (EP 1.363).

Peirce's concept of 'agapastic' evolution is expressed in the context of an admiration for Lamarck's theory about evolutionary mechanisms. Peirce suggests that, while "Evolution by sporting and evolution by mechanical necessity are conceptions warring against one another," the Lamarckian idea of inheritance of acquired characteristics offers a "third method, which supersedes their strife" (EP 1.360). According to Peirce, the origins of some modifications of organic form derive from purposeful striving towards an end, and the transmission of acquired characteristics from parent to offspring reflects a kind of habit-taking (EP 1.360), purpose and habit-taking both being, as we have seen, manifestations of Thirdness. Peirce further argues that the "psychical" endeavor (EP 1.360) that he takes to be the basis of some kinds of evolutionary change may be collective rather than individual:

> If it could be shown directly that there is such an entity as the "spirit of an age" or of a people, and that mere individual intelligence will not account for all the phenomena, this would be proof enough at once of agapasticism and of synechism. (EP 1.369)[15]

Although Peirce's Lamarckism will jar with contemporary evolutionary biologists it should be remembered, in his favour, that the then absence of an understanding of the mechanisms of heredity left the inheritance of acquired characteristics as a plausible contributor to the evolutionary process. Indeed, in the Introduction to the *Origin of Species* Darwin wrote, "I am convinced that natural selection has been the main but not the exclusive means of modification," and in the conclusion to later editions he described descent with modification as being "effected chiefly through the natural selection of numerous successive, slight favourable variations; aided in an important manner by

---

[15] Peirce's term 'synechism' refers to his enduring belief in the reality of continuities in nature. Continuity, according to Peirce, is a manifestation of Thirdness because that which connects two other things mediates between them. A simple example is that of a line. The continuity of the line derives from the fact that any two points are connected by the mediation of intermediate points (§1.2.2). Peirce's agapasticism may be regarded as the outworking of his belief in the reality of continuity at the other end of the scale of cosmic development, the continuity of thought.

the inherited effects of the use and disuse of parts".[16] Only after the importance of Mendelian inheritance was recognized (see §4.1.1) did evolutionary biology divest itself of the necessity to invoke Lamarckian mechanisms.

In summary, Peirce's evolutionary cosmology implicitly draws together the main areas of his philosophy: his threefold scheme of metaphysical categories, his semiotics, and his theory of inquiry. He speculated that the evolving universe is continually subject to the effects of chance (Firstness) and shaped by constraints (Secondness) as it elaborates ever-new levels of Thirdness. The reality of Thirdness in the universe is what makes the evolutionary process more than a mere balance of the effects of chance and necessity. Thirdness is manifest in the simplest forms of continuity and generality, in the emergence of natural selection and biological adaptation, in the growth of interpretative capacities and the myriad forms of semiosis, and in the possibility of creaturely love (the basis of which I shall consider further below).

5.2   *Braiding the Strands: Towards a Trinitarian Theology of Nature*

5.2.1   *Continuity, Semiosis and Thirdness*

In the opening sections of this chapter I have introduced Peirce's evolutionary cosmology and have noted that his three 'modes' of evolution – tychastic, anancastic, and agapastic – correspond respectively to his categories of Firstness, Secondness and Thirdness. In the following sections I begin to braid together this strand of thought constituted by Peirce's philosophy with the other strands that have been emerging in the course of the book; namely, the theological strand centred on my proposal for a semiotic model of the Trinity, and the scientific strand arising out of reflection on the key themes of evolutionary biology.

The first twist of the plait is that involving the theme (originally arising from my reflections on the implications of Darwinism) of evolutionary continuity. As I suggested in §4.1.2, the theological challenge

---

[16]   Charles Darwin, *The Origin of Species by Means of Natural Selection or the Preservation of Favoured Races in the Struggle for Life* (1859, reprinted New York: The Modern Library, 1993), 636–637.

posed by the phenomenon of evolutionary continuity is twofold. On the one hand, a theology of nature must provide a satisfactory account of how humans are related to, and what we have in common with, the rest of the natural world. On the other hand, theology must be able to give a coherent account of what, if anything, is unique about human existence. On the one side, the danger is that of falsely separating humanity from the rest of creation; on the other side lies the possibility of failing to recognize our genuine distinctiveness as a species. The biosemiotic perspective, introduced and explored in Chapter 4, offers a way of understanding important aspects of these continuities and discontinuities. From its earliest evolution life is, according to this perspective, dependent on interpretative processes. The feature common to the whole subsequent history of biological evolution is, as Hoffmeyer puts it, "the general expansion of 'semiotic freedom', that is to say the increase in richness or 'depth' of meaning that can be communicated".[17] Humans have evolved as a part of this semiotic web, but are distinctive in possessing a capacity for using signs which surpasses that of other known species. According to this view, we are not so much *Homo sapiens* but rather, as Ernst Cassirer put it, the *animal symbolicum*,[18] or, in Terrence Deacon's terminology, *Homo symbolicus*, 'the symbolic species'.[19] In this semiotic perspective, the characteristic that sets humans apart from the rest of the living world is not something entirely unprecedented, but a distinctive manifestation of a phenomenon that is a fundamental characteristic of all living things. This attempt to ground what is most characteristically human in something that pervades the whole living world has been one of the motivations for the field of biosemiotics from its beginnings.[20] As Hoffmeyer puts it:

---

[17] Jesper Hoffmeyer, *Signs of Meaning in the Universe* (Bloomington: Indiana University Press, 1996), 61; see also, ———, "A Biosemiotic Approach to the Question of Meaning," *Zygon: Journal of Religion and Science* 45, no. 2 (2010).

[18] Ernst Cassirer, *An Essay on Man: An Introduction to a Philosophy of Human Culture* (1944; Hamberg: Meiner Verlag, 2006), 31.

[19] Terrence Deacon, *The Symbolic Species* (Harmondsworth: Penguin, 1997), 340. Alternatively, in the light of my discussion in Chapter 3 of the possible over-emphasis on (Peircean) symbols as an explanation of human distinctiveness (§3.3.1), perhaps it would be better to call ourselves the 'semiotic species', *Homo semioticus.*

[20] For an early articulation of this view see Roger D. Masters, "Genes, Language and Evolution," *Semiotica* 2 (1970).

> To modern science, dualism still holds good as a way of dividing the world into two kingdoms, those of mind and of matter, the cultural and the natural spheres.... And it is this boundary that biosemiotics seeks to cross in the hopes of establishing a link between the two alienated sides of our existence – to give humanity its place in nature.[21]

Thus, according to the semiotic perspective, the most fundamental biological processes are connected with, and provide the ground of, human semiotic capacities. The interpretative processes by which an amoeba finds its way to food (§4.2.1) are part of the same continuum of semiosis which culminates in human entry into the 'semiotic matrix' (§3.3.2), in which our religious signs become the vehicle for our capacity for self-transcendence (§3.4.1). As Robert Corrington puts it, the semiotic continuity that we share with nature provides human religion with an "embeddedness in its true enabling ground in the innumerable orders of the world".[22] In short, according to the semiotic perspective, the properties of the simplest living thing are connected with the most developed human capabilities by the common thread of semiosis.

In terms of Peirce's categories and evolutionary cosmology, the growth of semiosis is an aspect of the growth of Thirdness in the universe.[23] If evolutionary continuity were restricted to the continuities of semiotic capability across species and through biological evolution then such continuities would begin with, and not before, the origin of life. Peirce's cosmology suggests, however, an even more fundamental thread of underlying continuity in nature. As outlined above (§5.1.2), Peirce emphasizes the reality of the role of Thirdness in the whole of cosmic evolution. Let us briefly recap that cosmological story of the growth of Thirdness. As we have seen, Peirce understood the tendency of the universe to 'take habits' as an important aspect of the entire history of the universe. At a fundamental physical level, according to Peirce's view, this would include the evolution of physical

---

[21] Hoffmeyer, *Signs of Meaning*, 94. See also Wendy Wheeler, *The Whole Creature: Complexity, Biosemiotics and the Evolution of Culture* (London: Lawrence and Wishart, 2006), especially Chapter 4.

[22] Robert S. Corrington, "Regnant Signs: The Semiosis of Liturgy," *Semiotica* 117, no. 1 (1997): 22.

[23] Of course, as emphasized in §1.3.2, signification and interpretation also depend on the categories of Firstness and Secondness, but the growth of meaning and understanding as a whole is properly regarded as a manifestation of the mediation and generality of Thirdness.

laws themselves. Moving to the biological level, natural selection is always selection for *general* types of outcome.[24] Thirdness is the category associated with generality, so the emergence of biological adaptations and functions is a manifestation of Thirdness (cf. §4.2.1). When creatures emerge whose individuals and communities are able to choose their own purposes – the general types of outcome for which they wish to work – a whole new realm is opened up for the course of cosmic evolution.[25] An amoeba acts purposefully by crawling up a chemical gradient in order to achieve the general type of outcome of obtaining nutrition (§4.2.1). But the amoeba cannot choose its own purposes. Its propensity to crawl up appropriate attractant gradients is a property acquired by natural selection, a process that itself operates without any overall purpose in view.

The human creature, in contrast, is able to select its own purposes. These purposes may be trivial or grand, intelligible to others or absurd. The formulation of these purposes requires a particular semiotic capability, the capacity to form 'internal' signs representing possible future states, and then to exercise choice about which future states to pursue (§4.2.1). Importantly, unlike the purposes towards which the amoeba's behaviour is directed, human purposes may be neutral or even harmful with respect to the individual's (or the community or society's) survival. Here is the enduring insight of the connection that Peirce made between the mode of evolution characterized by Thirdness and *agape* love. In the passage quoted in the previous section from *Evolutionary Love* it is significant that Peirce does not identify love merely with "self-*sacrifice*" but with, "the ardent impulse to fulfil another's highest impulse" (EP 1.354). That is to say, we humans possess the gift of the capacity to choose to direct our behaviour towards outcomes related to the good of other humans or, more widely, the good of other creatures. Choosing such purposes may come at high cost to the person who so chooses. As Colapietro puts it, Peirce maintained that "the realization of the self demanded a series of acts by which the self surrenders itself to ever more inclusive ideals".[26] In a Christian perspective the ultimate outworking of this growth of Thirdness, of agapastic evolution, is the crucifixion, the

[24] T. L. Short, *Peirce's Theory of Signs* (Cambridge: Cambridge University Press, 2007), 128–33.

[25] Ibid., 164, 316.

[26] Colapietro, *Peirce's Approach to the Self*, 96.

most radical act of a creature giving its whole being for the fulfilment of the lives of others.[27]

We may thus affirm, with Peirce, the reality of Thirdness in cosmic and biological evolution without accepting his ideas about Lamarckian mechanisms of evolution. That particular feature of Peirce's thought may be regarded as a specific and non-essential aspect of his more fundamental insight about the reality of Thirdness in evolution. The more lasting insight of Peirce's account is that Thirdness is operative in, and essential to, the most fundamental continuities, generalities, and lawfulness of nature. It is manifest in a new form when the causal power of generality becomes influential in the emergence of function and adaptation. Yet a new manifestation of Thirdness emerges with the first entities capable of making interpretations, and again when organisms emerge that are able to 'choose' actions appropriate to a given purpose. Eventually, in humankind, creatures have emerged who are able to choose their own purposes.

In this first twist of the braid, then, the theme of evolutionary continuity that runs through the scientific strand of my inquiry has been brought into relation with, and interpreted by, Peirce's ideas about the role of Thirdness in the development of the cosmos. By bringing together these two strands we have a way of regarding the continuities between biological species as but one manifestation of a fundamental structuring principle in nature. That principle is the reality of Thirdness, manifest in every aspect of continuity, generality, purposefulness and intelligibility in the cosmos, and evolving from the most basic generalities and continuities of physical reality to the forms of Thirdness that are manifest in one creature's *agape* love for another.

The third strand in this first twist of the braid, alongside the empirical observation of continuities in the world and the interpretation of these continuities in the light of Peirce's evolutionary cosmology, is the possibility of a *Trinitarian interpretation* of this account of the continuous and pervasive reality of Thirdness in the cosmos. In my proposal for a 'semiotic model' of the Trinity I have drawn attention to the similarities between Peirce's category of Thirdness and scriptural

---

[27] In the context of the account of the Incarnation developed in Chapter 3, this ultimate manifestation of evolutionary Thirdness should be considered instrumental to sealing the fullest evolutionary manifestation of Firstness, the appearance in the created order of the very *quality* (Firstness) of God's being, the revelation of the Father's self-giving love.

and traditional ways of thinking about the Holy Spirit, the Third Person of the Trinity (§2.3). The question now arises, what is the relation between the hypothesis that Thirdness is a fundamental structuring principle in the cosmos and the idea that Thirdness offers a way of speaking about the distinctive character of the Holy Spirit?[28] In answer to this question, I venture that the evolutionary outworking of the reality of Thirdness in the cosmos may be understood as, in some sense, the *work* of the Spirit. In that case, the relation between the reality of Thirdness in the world and the fact that there appear to be parallels between the category of Thirdness and traditional Christian ways of speaking about the Spirit would appear to amount to more than (merely) a possible basis for the construction of a convenient analogy (one that moves from a particular aspect of our experience of the world to one way – among others – of talking about the Spirit). Rather, it might suggest that these apparent parallels between phenomenological analysis of the patterns of worldly reality and Christian reflection on the eternal being of God are a reflection of something real imparted to the world by the triune creator. In other words, bringing together the scientific, philosophical and theological strands of my inquiry may open up a route into a Trinitarian account of God's creative activity. Later in this chapter (§5.3) I shall develop this idea more fully; before doing so we must undertake two further twists of the scientific-philosophical-theological braid.

5.2.2   *Contingency, Emergent Novelty, and Firstness*

In Chapter 4 I identified evolutionary contingency – the radically chancy nature of the evolutionary process – as one of the key themes presented by Darwinism to Christian theology and I suggested that this theme has been particularly prominent in what I identified as the most recent phase of Darwinian evolutionary biology (§4.1.1). The theme of evolutionary contingency has clear parallels with Peirce's notion of tychastic evolution, the mode of evolution characterized by

---

[28] It is important to note that this question does not, as might appear at first sight, involve a problematic logical circularity. Admittedly, a phenomenological derivation of the category of Thirdness has been developed into both a philosophical analysis of cosmic evolution and a theological approach to Trinitarian thought. However, the fact that both of these strands can be traced back to the original phenomenological analysis offered by Peirce's categories does not prevent us from asking whether and how the resulting cosmological and theological hypotheses may be related.

Firstness (§5.1.2). Just as we have seen in the context of the relation between evolutionary continuity and Thirdness (§5.2.1), I wish to suggest, in this section, that contemporary science supports Peirce's hunch that the relation between Firstness and cosmic evolution runs much deeper than simply the chanciness of the processes that underlie Darwinian evolutionary biology.

One of the most notable scientific developments of the twentieth century was the recognition that nature is not adequately described as a machine whose behaviour is governed entirely by deterministic laws.[29] In the seventeenth century Newton had shown how the behaviour of simple dynamic systems could be described in terms of such laws, and by the eighteenth century Newton's dynamics had become the basis of a rigidly deterministic world-view. As Laplace put it, given a complete knowledge of the current state of the universe its entire future history could be precisely predicted.[30] Various scientific developments over the last 100 years or so have led to a very different view of nature, a view in which ontological indeterminacy and epistemological limitation are real and enduring features of the universe. Remarkably, although Peirce did not live to see these developments his cosmology anticipated the twentieth century rejection of determinism. As Karl Popper put it:

> So far as I know Peirce was the first post-Newtonian physicist and philosopher who thus dared to adopt the view that to some degree *all clocks are clouds*; or in other words, that *only clouds exist*, though clouds of very different degrees of cloudiness.[31]

Let us briefly survey some of the ways in which contemporary science appears to vindicate Peirce's insight that the cosmos is subject to real contingency. The phenomena that interest us here are those that have the character of indeterminacy, novelty, unpredictability, or freshness. The indeterminacy of quantum events is one of the clearest examples. The position and momentum of subatomic particles cannot be specified exactly, but only in terms of probabilistic functions

---

[29] See, for example, Ilya Prigogine, *The End of Certainty: Time, Chaos and the New Laws of Nature* (New York: The Free Press, 1997).

[30] Robert John Russell, "Introduction," in *Chaos and Complexity: Scientific Perspectives on Divine Action*, ed. Robert John Russell, Nancy Murphy, and Arthur R. Peacocke (Vatican City / Berkeley: Vatican Observatory / Center for Theology and the Natural Sciences, 1995), 13.

[31] Quoted in Brent, *Peirce*, 6.

containing an inherent element of indeterminacy. The timing of any individual radioactive decay cannot be predicted in advance, and no determinate cause can be identified for such a decay having occurred now rather than at some other time. Although some physicists are sceptical about the idea that quantum events manifest true ontological indeterminacy, proposing instead that they reflect the effects of 'hidden variables' that are themselves deterministic, the majority opinion amongst physicists currently supports the presence of genuine indeterminacy at the quantum level.[32] Furthermore, it is possible that ontologically indeterminate events at the level of sub-atomic particles can lead to macroscopic effects in the world of every day medium-sized objects, such as microbes and people. For example, quantum events at the subatomic level may lead to genetic mutations, which in turn have phenotypic effects that may become subject to natural selection. Hence the macroscopic course of evolution could, in principle, be influenced by 'chance' events at the subatomic level.[33]

A more controversial example of possible indeterminacy in nature is the behaviour of complex dynamic systems, as reflected in the field of chaos theory. An important characteristic of complex systems is their extreme sensitivity to initial conditions. The paradigmatic example is the so-called butterfly effect: a butterfly flaps its wings in Peking and the result (unpredictable even if all the initial conditions are known) is a storm in New York the following month.[34] If the initial conditions of the system were ontologically indeterminate, this indeterminacy would be amplified by the system in a way that could produce a macroscopically significant effect.[35] In that case, although the unpredictability of the system would derive ultimately from the same

[32] John Polkinghorne, "The Metaphysics of Divine Action," in *Chaos and Complexity: Scientific Perspectives on Divine Action*, ed. Robert John Russell, Nancy Murphy, and Arthur R. Peacocke (Vatican City / Berkeley: Vatican Observatory / Center for Theology and the Natural Sciences, 1995), 148.

[33] Robert John Russell, "Special Providence and Genetic Mutation: A New Defense of Theistic Evolution," in *Evolutionary and Molecular Biology: Scientific Perspectives on Divine Action*, ed. Robert John Russell, William R. Stoeger, and Francisco J. Ayala (Vatican City / Berkeley: Vatican Observatory / Center for Theology and the Natural Sciences, 1998).

[34] James Gleick, *Chaos: Making a New Science* (London: Heinemann, 1988), 8.

[35] James P. Crutchfield et al., "Chaos," in *Chaos and Complexity: Scientific Perspectives on Divine Action*, ed. Robert John Russell, Nancy Murphy, and Arthur R. Peacocke (Vatican City / Berkeley: Vatican Observatory / Center for Theology and the Natural Sciences, 1995), 43.

kinds of quantum indeterminacy mentioned above, nevertheless the nature of the behaviour of complex systems would cause these lower-level indeterminacies to give rise to an intrinsic unpredictability in a wide range of kinds of macroscopic outcome. John Polkinghorne is well known for having advocated a stronger interpretation of the indeterminacy of complex systems, according to which such systems are themselves a locus of genuine ontological indeterminacy.[36] The problem with such a view is that the intrinsic unpredictability of complex systems arises as a (previously unexpected) consequence of the interaction of entirely deterministic equations.[37] If the initial conditions of such systems were to depend only on deterministic processes (rather than on the kinds of lower-level indeterminacy just discussed) then the behaviour of the whole system will be deterministic.[38] As John Barrow puts it: "Classical (that is non-quantum mechanical) chaotic systems are not in any sense intrinsically random or unpredictable. They merely possess extreme sensitivity to ignorance".

From a Peircean perspective, the main interest of Polkinhorne's idea that there is an *intrinsic* indeterminacy in complex systems perhaps lies in the way in which Polkinghorne has replied to this objection. Polkinghorne's response is to suggest that the "apparently deterministic" equations from which chaos theory is developed are actually only "approximations to the true, supple, physical reality".[39] This is reminiscent of Peirce's view that physical laws have themselves evolved and are not, always and everywhere, rigidly and inviolably obeyed by nature. According to Peirce, "metaphysics has always been the ape of mathematics" (EP 1.296). For example, in the past the idea that Euclid's geometry provides an exact description of physical space

---

[36] Polkinghorne, *Metaphysics of Divine Action*, 154.

[37] Willem B. Drees, "Gaps for God?," in *Chaos and Complexity: Scientific Perspectives on Divine Action*, ed. Robert John Russell, Nancy Murphy, and Arthur R. Peacocke (Vatican City / Berkeley: Vatican Observatory / Center for Theology and the Natural Sciences, 1995), 227.

[38] A finite observer may not be capable of measuring the initial conditions accurately enough to predict this behaviour. Arthur Peacocke, "God's Interaction with the World: The Implications of Deterministic 'Chaos' And of Interconnected and Interdependent Complexity," in *Chaos and Complexity: Scientific Perspectives on Divine Action*, ed. Robert John Russell, Nancy Murphy, and Arthur R. Peacocke (Vatican City / Berkeley: Vatican Observatory / Center for Theology and the Natural Sciences, 1995), 271.

[39] John Polkinghorne, *Science and Christian Belief: Theological Reflections of a Bottom-up Thinker* (London: SPCK, 1994), 26.

was taken to be analogous to, and consistent with, with a deterministic view of physical laws. With the nineteenth century recognition of the existence of self-consistent non-Euclidean geometries, the axioms of geometry that were previously held to be self-evident were called into question. Prophetically, Peirce predicted that "within another century our grandchildren will surely know whether the three angles of a triangle are greater or less than 180°, – that they are exactly that amount is what nobody can ever be justified in concluding" (EP 1.295). Empirical confirmation of Einstein's general theory of relativity has subsequently confirmed Peirce's conviction that physical reality does not conform exactly to Euclidean geometry. By analogy, Peirce called into question the absolute character of physical laws:

> The metaphysical axioms are imitations of the geometrical axioms; and now that the latter have been thrown overboard, without doubt the former will be sent after them. It is evident, for instance, that we can have no reason to think that every phenomenon in all its minutest details is precisely determined by law. (EP 1.296)

I do not know whether there is any justification for Peirce's suspicions about the character of physical laws, but if there is then this would certainly constitute another aspect of our emerging understanding of the reality of elements of indeterminacy in the universe.

An apparently more straightforward way in which the outcomes of events may be understood to be subject to chance occurs when two unrelated causal chains intersect. Arthur Peacocke gives the example of someone who walks out of a building and is unexpectedly hit on the head by a hammer which was accidentally dropped by a man repairing the roof.[40] Peirce, as it happens, recalled his father reading him a similar story from the *Arabian Nights*. In *A Guess at the Riddle* (1887–1888) he wrote:

> "How did I slay thy son?" asked the merchant, and the genie replied, "When thou threwest away the date-stone, it smote my son who was passing at the time, on the breast, and he died forthright." Here there were two independent facts, first that the merchant threw away the date-stone, and second that the date stone struck and killed the genie's

---

40 Arthur R. Peacocke, "Chance and Law in Irreversible Thermodynamics, Theoretical Biology, and Theology," in *Chaos and Complexity: Scientific Perspectives on Divine Action*, ed. Robert John Russell, Nancy Murphy, and Arthur R. Peacocke (Vatican City / Berkeley: Vatican Observatory / Centre for Theology and the Natural Sciences, 1995), 124.

son…What monstrous injustice and inhumanity on the part of that genie to hold that poor merchant responsible for such an accident! I remember how I wept at it, as I lay in my father's arms and he first told me the story. (EP 1.254–255)

Thomas F. Tracy argues that the meaning of "chance" in Peacocke's example of the dropped hammer may in fact simply represent the unexpectedness of the event *from the victim's point of view*.[41] If the two causal chains were each completely deterministic then the "unexpected" event would in fact always have been destined to happen. Even if we accept Tracy's criticism, however, I suggest that the observer (whether initiator or victim of the event) experiences a kind of Firstness in the accident. Peirce's upset at the story from the *Arabian Nights* derives from the injustice of holding the merchant responsible for the effect of an action whose consequences could not reasonably have been predicted.[42] Perhaps this sort of chance might be called 'virtual indeterminacy', in contrast to the 'absolute indeterminacy' that would be manifest by an event that was genuinely ontologically indeterminate. Langdon Gilkey touches on a similar idea when he says that, whatever the outcome of debates about whether the unpredictability of the world reflects an underlying metaphysical indeterminacy, we experience "real openness from the inside".[43]

A final example of the reality of Firstness in nature is the case of so-called 'emergent' phenomena.[44] It may be less evident that emergence is a form of Firstness than is the case with, say, the ontological indeterminacy of quantum events. The characteristic of emergent

---

[41] Thomas F. Tracy, "Particular Providence and God of the Gaps," in *Chaos and Complexity: Scientific Perspectives on Divine Action*, ed. Robert John Russell, Nancey Murphy, and Arthur Peacocke (Vatican City / Berkeley: Vatican Observatory / Centre for Theology and the Natural Sciences, 1995), 312.

[42] In Peacocke's example, the victim's (free) choice to leave the building at that moment is an additional reason for considering the outcome as less than completely determined. This assumes that one takes free-will to be real and incompatible with determinism, a matter on which philosophers of mind are divided. See, for example, Roy C. Weatherford, "Freedom and Determinism," in *The Oxford Companion to Philosophy*, ed. Ted Honderich (Oxford: Oxford University Press, 1995).

[43] Langdon Gilkey, "The God of Nature," in *Chaos and Complexity: Scientific Perspectives on Divine Action*, ed. Robert John Russell, Nancy Murphy, and Arthur R. Peacocke (Vatican City / Berkeley: Vatican Observatory / Center for Theology and the Natural Sciences, 1995), 218.

[44] Philip Clayton and Paul Davies, eds., *The Re-Emergence of Emergence: The Emergentist Hypothesis from Science to Religion* (Oxford: Oxford University Press, 2006).

properties that identifies them as manifestations of Firstness is their *novelty with respect to the properties manifest at the 'lower' levels of organization from which they arise*. For example, the property of 'wetness' is not present in individual water molecules, but emerges as a property of the interactions of large collections of such molecules.[45] The interactions between the molecules are lawful (manifesting Thirdness) and constrained (manifesting Secondness), but emergent out of these lawful constraints is a novel and irreducible property, that of wetness. As such, the property of wetness may be regarded, I suggest, as a manifestation of Firstness.

The case of emergent phenomena illustrates particularly clearly an important point that applies to all of the examples of the kinds of ontological openness discussed in this section (which is not intended to be an exhaustive list). A feature of each of these examples is that, as manifestations of Firstness, they all depend on the continuing operation of Secondness and Thirdness. (In §2.4.2 I suggested that this dependence of Firstness on Secondness and Thirdness is analogous to the idea of the *perichoresis* of the Father, Son and Spirit in Trinitarian theology.) Thus the new kinds of organization and property that arise in emergent phenomena depend on the relevant lower levels of dynamics having their own constraints (Secondness) which may be described in terms of law-like behaviour (Thirdness) applicable to that level of organization. Similarly, the ontologically indeterminate event of (the timing of) a radioactive decay necessarily takes place within a context of lawful regularities of nature (Thirdness) and the actualities and constraints (Secondness) associated with the particular atomic and sub-atomic entities involved. According to this picture, then, Firstness has an ongoing place at every level of nature's hierarchies of organization and is continually emergent from the structures and regularities (Secondness and Thirdness) of the universe. Futhermore, the picture is not that of an essentially deterministic universe with a few lacunae of indeterminacy and openness to novelty; rather, to repeat Popper's memorable metaphor quoted above, it is a universe in which all clocks are clouds, with varying degrees of cloudiness.

---

[45] Cf. Terrence W. Deacon, "Emergence: The Hole at the Wheel's Hub," in *The Re-Emergence of Emergence: The Emergentist Hypothesis from Science to Religion*, ed. Philip Clayton and Paul Davies, *Emergence* (Oxford: Oxford University Press, 2006), 127.

It is no coincidence that most, if not all, of the possible forms of ontological indeterminacy mentioned above have been suggested as potential loci for divine action in the created order. Where there is natural openness in the causal nexus of the world there would appear to be the possibility of divine influence of a kind that would not involve contravening the (otherwise deterministic) laws of nature.[46] I do not dismiss the possibility of divine action occurring through this ontological openness of the world. However, I am inclined to a very positive attitude to such openness in itself, not solely as a possible locus for divine action. We live in a universe, it seems, in which chance, novelty, freshness, and spontaneity are manifest in a plurality of modes and at multiple levels.

In this second twist of the plait, then, the theme of evolutionary contingency that runs through the scientific strand of my inquiry has been brought into relation with Peirce's ideas about the role of First-ness in the development of the cosmos. By bringing together these two strands we have a way of regarding the openness and chanciness of biological evolution as but one manifestation of a more general feature of the world. That characteristic is the ever-present reality of Firstness, manifest in every kind of indeterminacy, contingency and new quality that contributes to and emerges within the shape of the evolving cosmos. The third strand in this iteration of the plait is, again, the possibility of a Trinitarian interpretation of this relation between the scientific and philosophical strands. In my proposal for a 'semiotic model' of the Trinity I drew attention to the similarities between Peirce's category of Firstness and scriptural and traditional ways of thinking about the Father, the First Person of the Trinity (§2.2). The question arises, what is the relation between the hypothesis that Firstness is an ever-emergent reality in the cosmos and the idea that Firstness offers a way of speaking about the distinctive character of God the Father? In the parallel case of the question of the relation between worldly Thirdness and the eternal being of God (§5.2.1) I ventured that the evolutionary role of Thirdness might be understood as in some sense the 'work' of the Spirit. I wish to suggest, similarly, that the role of Firstness in cosmic evolution may be

---

[46] Discussed in several of the contributions to Robert John Russell, Nancey Murphy, and William R Stoeger, eds., *Scientific Perspectives on Divine Action: Twenty Years of Challenge and Progress* (Vatican City / Berkeley: Vatican Observatory / Centre for Theology and the Natural Sciences, 2007).

regarded as ontologically grounded in the intra-Trinitarian freedom of the Father, who is the ground of all potentiality and Firstness 'within' the Trinity. Again, further development of this idea will be deferred until later in this chapter (§5.3), and, in Chapter 7, I shall argue that the relation between Firstness in the created order and the Person of God the Father is an important aspect of what it means to affirm the 'goodness' of creation (§7.2.1).

We come, then, to the third twist of the plait. Whereas in the present section and the preceding one I have concentrated particularly on the strands relating to scientific and philosophical descriptions of the world, leaving the outline of the theological strand somewhat sketchy, the next section will bring the theological threads of the argument to the fore.

5.2.3   *Naturalism, Secondness and the Trinitarian Mediation of Creation*

For the purpose of undertaking this third twist of the braid, then, I now introduce a thread of the theological tradition, namely, the concept of the 'Trinitarian mediation of creation'. At its barest, this is the idea that all things came into being through the Word, the Second Person of the Trinity:

> In the beginning was the Word, and the Word was with God, and the Word was God. He was in the beginning with God. All things came into being through him, and without him not one thing came into being. (John 1:1–3)

According to James Dunn, this opening of the prologue to the Fourth Gospel is the only New Testament passage written with the conscious intention of expressing the idea that Christ was pre-existent and active in creation.[47] The insight and motivation behind such a state-

---

[47] James D. G. Dunn, *Christology in the Making: A New Testament Inquiry into the Origins of the Doctrine of the Incarnation*, 2nd ed. (London: SCM Press, 1989), 176–96, 206–09, 39–50. Other New Testament passages that might be interpreted as implying a Christological mediation of creation in addition to those discussed below include Heb. 11.3 and Rev. 4.11. The idea of the Trinitarian mediation of creation has roots in the Hebrew notion of creation taking place through God's Word (Genesis, Chapter 1; Ps. 148:3–5) and Wisdom (Job 28:23–28; Prov. 3:19, 8:22–31; Sir. 24:1–9; Wisd. 8:4–6). I drew attention to references in the Hebrew scriptures to the Spirit's role in creation in §2.3.1, and I discuss the Spirit's creative role from a Trinitarian perspective below (§5.3.2).

ment is, as Moltmann argues, a recognition of the intrinsic connection between creation and redemption:

> If Christ is the foundation for the salvation of the whole creation, then he is also the foundation of creation's very existence. If, being the foundation of salvation, he is all creation's goal, then he has been its foundation from eternity.[48]

Whether or not Dunn is correct about the uniqueness of John's prologue in asserting the pre-existence of Christ and his role in creation, several other New Testament passages express something of the same idea. So Paul's First Letter to the Corinthians:

> …yet for us there is one God, the Father, from whom are all things and for whom we exist, and one Lord, Jesus Christ, *through whom are all things and through whom we exist.* (1 Cor. 8:6, italics mine)

In the first chapter of Colossians the idea of the mediation of creation through the Word is set alongside an implicitly semiotic understanding of the relation between Christ (the 'image') and God (the Father):

> *He is the image of the invisible God*, the firstborn of all creation; *for in [or by] him all things in heaven and on earth were created*, things visible and invisible, whether thrones or dominions or rulers or powers – all things have been created through him and for him. He himself is before all things, *and in [or by] him all things hold together.* (Col. 1:15–17, italics mine)

Similarly, the opening of the Letter to the Hebrews links an implicitly semiotic Christological statement with the idea of the word / Word as the mediator of creation:

> Long ago God spoke to our ancestors in many and various ways by the prophets, but in these last days he has spoken to us by a Son, whom he appointed heir of all things, through whom he also created the worlds. *He is the reflection of God's glory and the exact imprint of God's very being, and he sustains all things by his powerful word.* (Heb. 1:1–3, italics mine)[49]

---

[48] Jürgen Moltmann, *The Trinity and the Kingdom of God: The Doctrine of God*, trans. Margaret Kohl (London: SCM Press, 1981), 102.

[49] We may also note that the emphasis in the New Testament on the role of the Spirit as the source of the *new* creation probably militated against the New Testament writers making explicit connections between the Spirit and the "original" work of creation. The fact that these passages are concerned with the role of the Son/

Drawing in part on these New Testament precedents it was Irenaeus of Lyons (c. 130–c. 200) who developed, as Gunton puts it, "the first thoroughgoing and expansive Christian doctrine of creation".[50] At the heart of Irenaeus's vision lay an emphasis on the role of all three persons of the Trinity in God's creative activity:

> It was not angels, therefore, who made us, nor who formed us, neither had angels power to make an image of God, nor any one else, except the Word of the Lord, nor any Power remotely distant from the Father of all things. For God did not stand in need of these [beings], in order [that] the accomplishing of what He had Himself determined with Himself beforehand should be done, as if he did not possess His own hands. For with Him were always present the Word and Wisdom, the Son and the Spirit, by whom and in whom, freely and spontaneously, He made all things, to whom also he speaks, saying, "Let us make man after our image and likeness;" He taking from himself the substance of the creatures [formed] and the pattern of things made, and the type of all the adornments in the world.[51]

This passage neatly illustrates the central features of Irenaeus's Trinitarian doctrine of creation, which may be summarized as follows:

> 1) Irenaeus's assertion that God creates through the mediation of the Son and Spirit points to the closely connected doctrine of creation *ex nihilo*. If creation depends only on the mediation by God's own self then there is no need to suppose that it takes place from some other co-eternal reality alongside God.[52]

> 2) The idea of the creative mediation of the Son and Spirit dispenses with the need to suppose, as Origen subsequently did in the scheme that he adopted from neo-Platonism, that creation takes place through a hierarchy of intermediaries,[53] or according to some pre-existent blueprint.[54] The doctrine of creation *ex nihilo* through the mediation of the Son and Spirit thus establishes God's absolute distinctness from

---

Logos does not exclude an equally important place for the Spirit in creation, as I shall discuss further below (§5.3.2).

[50] Gunton, *Triune Creator*, 52.

[51] *Adversus Haereses* 4.20.1. Irenaeus, *The Writings of Irenaeus, Volume 1*, trans. Alexander Roberts and W. H. Rambaut (Edinburgh: T & T Clark, 1867), 439.

[52] Gunton, *Triune Creator*, 53.

[53] Ibid., 62.

[54] Gerhard May, *Creatio Ex Nihilo: The Doctrine Of "Creation out of Nothing" In Early Christian Thought* (Edinburgh: T&T Clark, 1994), 169–70. May appears to mean that creation did not involve a blueprint that existed independently of God.

creation,[55] yet at the same time maintains the coherence of the notion of God's ongoing relation to it.[56]

3) Through the concept of the Trinitarian mediation of creation, Irenaeus is able to affirm that God creates "freely" and yet avoid the problem of apparent arbitrariness or capriciousness that can follow from a one sided emphasis on creation out of nothing.[57] Understanding creation as the work of the Triune creator thus protects against regarding creation as an arbitrary exercise of God's will by anchoring it in the very being of God.[58] An affirmation of God's freedom must, as Pannenberg points out, go hand in hand with an understanding of God's faithfulness to creation. The Christian doctrine of creation achieves this by grounding the concept of creation *ex nihilo* in the Trinitarian love of God.[59]

4) If creation is neither the work of a Gnostic demiurge (which implies an inferior creator), nor a necessary neo-Platonic emanation from God (which is often associated with the idea of an ontological hierarchy, matter being regarded as inferior to spirit), it is possible to affirm, counter to Gnosticism and neo-Platonism, the goodness of the whole created order.[60]

How does the idea of the Trinitarian mediation of creation tie in with the remaining scientific and philosophical themes of our plait; that is, the threads relating to ontological naturalism and Peirce's idea of anancastic evolution? This question may be approached by considering two different ways in which the term 'contingency' may be understood. While I have tended to use the term 'contingency' in connection with the category of Firstness and the tychastic mode of evolution, as manifested in the chanciness of the evolutionary process, it is nevertheless the case that the 'given-ness' of certain aspects of the created order, reflected in the Secondness of the constraints

---

[55] Ibid., 161.

[56] Gunton, *Triune Creator*, 60.

[57] Ibid., 121.

[58] Christoph Schwöbel, "God, Creation and the Christian Community: The Dogmatic Basis of a Christian Ethic of Createdness," in *The Doctrine of Creation: Essays in Dogmatics, History and Philosophy*, ed. Colin E. Gunton (Edinburgh: T&T Clark, 1997), 156–57.

[59] Wolfhart Pannenberg, *Systematic Theology, Volume 2*, trans. Geoffrey W. Bromiley (Grand Rapids: Eerdmans, 1994), 19.

[60] Gunton, *Triune Creator*, 52–54. Interestingly, from our evolutionary perspective, it should be noted that for Irenaeus the goodness of creation means not that it is already perfect, or was so but has fallen from perfection; rather, creation is good because it is destined for eschatological perfection (ibid., 55–56). I consider the 'goodness' of creation further in §7.2.

that shape the course of evolution, may itself be regarded as a kind of 'contingency'. Indeed, this is the standard theological meaning of contingency: the idea that the world depends on God, and the closely connected notion that the way that the world is depends on how God willed it to be.[61] Michael Foster argued in the 1930s that this concept of theological *voluntarism* may be regarded as distinguishing the Christian doctrine of creation from Greek thought. If the world is the way that it is because God willed it to be so, as the Christian doctrine of creation generally holds, then the world might have been otherwise than it actually is. On the other hand, if the world is an emanation from God, or in some other way necessarily connected with God's being, then no other possible configuration of the world, other than the one that we know, would be conceivable. As Foster put it:

> The *voluntary* activity of the Creator (i.e., that in his activity which exceeds determination by reason) terminates on the *contingent* being of the creature....If such voluntary activity is essential to God, it follows that the element of contingency is essential to what he creates.[62]

Foster suggested, further, that the rise of modern science depended on the concept of the contingency of creation.[63] If the world could have been other than it is then attempts to deduce rationally how the world must be will inevitably fail. Only empirical investigation can reveal what sort of world God has chosen to create.[64] It is notable that Foster attributed the divergence between Christian and Greek views of the contingency of creation to the development of the doctrine of the Trinity.[65] Plato had described the relationship between God and the world both in terms of that of a maker to something made, and in terms of a parent to their offspring. The Christian insight, according to Foster, was to restrict the latter type of relationship to the intra-Trinitarian relations. As John Brooke and Geoffrey

---

[61] Colin E. Gunton, *The Triune Creator: A Historical and Systematic Study* (Edinburgh: Edinburgh University Press, 1998), 113.

[62] M. B. Foster, "The Christian Doctrine of Creation and the Rise of Modern Science," *Mind* 43 (1934): 464.

[63] ———, "Christian Theology and Modern Science of Nature (II)," *Mind* 45 (1936).

[64] Brooke and Cantor warn that Foster's argument concerning the dependence of empirical science on a voluntarist doctrine of creation may be, from an historical point of view, an oversimplification. John Brooke and Geoffrey Cantor, *Reconstructing Nature: The Engagement of Science and Religion* (Edinburgh: T&T Clark, 1998), 20–21.

[65] M. B. Foster, "Christian Theology and Modern Science of Nature (I)," *Mind* 44 (1935): 445.

Cantor put it: "This left the natural world as a created artefact, the artistry of which could be elucidated and appreciated".[66]

Colin Gunton likewise places the notion of the contingency of nature in a Trinitarian light. According to Gunton, the Christian account of the contingency of the world that subsequently proved so conducive to the development of empirical science was a corollary of William of Ockham's strong emphasis on the doctrine of creation *ex nihilo*.[67] Gunton argues, though, that Ockham's unqualified emphasis on the idea of creation *ex nihilo* allowed God's decision to create to appear arbitrary, an act of sheer will rather than a work of love.[68] Indeed, the underlying motivation behind the various alternatives to creation *ex nihilo* offered by process theology and some versions of panentheism is, arguably, a perception that over-emphasis on divine will and divine transcendence is apt to result in a view of God as distant from, and unconcerned with, the created order.[69] However, as Gunton persuasively argues in *The Triune Creator*, the necessary resources for preventing the doctrine of creation *ex nihilo* from privileging divine will over divine love have been, in fact, already deeply embedded in the Christian tradition all along.[70] Specifically, the absolute otherness of the world from God may be maintained without jeopardising the affirmation of God's intimate care for creation when, as outlined at the beginning of this section, creation is understood as a triune act, mediated by God's own two 'hands'.

In Chapter 4 I identified ontological naturalism – which may also be thought of in terms of the integrity of the fabric of the created order – as one of the key themes arising from reflection on evolutionary biology (§§4.1.1–4.1.2). The hypothesis of the internal causal integrity of the cosmos appears to cohere well with the theological concepts of theological voluntarism, creation *ex nihilo*, and the Trinitarian mediation of creation. As Gunton puts it (though not in the context of a theological interpretation of ontological naturalism):

---

[66] Brooke and Cantor, *Reconstructing Nature*, 20.

[67] Gunton, *Triune Creator*, 121–25.

[68] Ibid., 121.

[69] David Fergusson, "Creation," in *The Oxford Handbook of Systematic Theology*, ed. John Webster, Kathryn Tanner, and Iain Torrance (Oxford: Oxford University Press, 2007), 81–83.

[70] Gunton, *Triune Creator*.

> When creation is understood as a triune act…the coherence and true diversity of the created order and its being enabled to be what it truly is are able to be given due place.[71]

The key move I propose here is to connect these threads of the theological tradition with the 'semiotic model' of the Trinity developed in Chapter 2. According to the semiotic model, the Son / Word is understood to be the eternal principle and ground of otherness within the being of God (§2.1). *Combining the semiotic model with the idea of the Trinitarian mediation of creation, I propose that the absolute otherness of the world from God may be understood as being made possible by the eternal otherness within the being of God.* According to this perspective the distinction (Secondness) between God as creator and the world as creation is grounded in the eternal distinction (Secondness) between the Father and the Son.[72] By virtue of the fact that creation takes place through the Word, the ground of otherness within the Trinity, God has freedom to create voluntarily yet without capriciousness, and the created order is granted freedom to be itself, not a necessary emanation from God.

The freedom of God to create in 'this way', not 'that way', is reflected in the 'given-ness' of this particular world. Furthermore, the freedom of the created order to be itself is reflected in its having its own 'internal' integrity. According to this view, I suggest, the experience of knocking up against the constraints of the world (cf. EP 1.249) may be understood as an intra-worldly experience of Secondness that reflects the otherness (Secondness) of creation from creator. The Secondness that is manifest in the world being 'this way', not 'that way', and the corresponding Secondness of there being constraints on the course of cosmic evolution (Peirce's 'anancasm'), is thus a reflection of the otherness of the world from God; a reflection of the fact that God created this world rather than some other logically possible world. When we knock up against things in the world, or when evolution is constrained by being able to follow 'this path' but not 'that path', we may say that this is a consequence of us living in this particular universe, rather than in some other logically possible universe in which these particular constraints would not apply.

---

[71] Ibid., 143.

[72] As I have explored in §2.2.2, this eternal distinction between the Father and Son is a logical ordering, a reflection of the eternal reality of Secondness within the Trinity, not a denial of the Son's divinity or co-equality with the Father.

(A universe with no constraints, no Secondness, would presumably be unproductive of life, since it would contain only chaos, but we can imagine other life-generating universes in which at least some of the constraints were different to those that we encounter.) On this account, then, the fruitfulness of the scientific assumption of onto-logical naturalism is a reflection of the otherness of the world from God – the integrity of the created order – grounded in the creative work of the Word. And the creaturely experience of resistance and constraint *within* the created order is a reflection of the given-ness of the world – the world's being this way and not that way – likewise grounded in the creative work of the eternal ground and principle of otherness and distinction 'within' the being of God.

To summarize this and the preceding two sections, I have been braiding together three strands of thought: scientific, philosophical, and theological. First I took up the scientific theme of evolutionary continuity, developed this in the context of Peirce's speculations about the cosmological role of Thirdness and *agape* love, and tenta-tively linked these ideas with the possible creative role of the Spirit, who is the ground of all mediation and generality within the Trinity. Next I took up the scientific theme of the historical contingency of evolution, showed how Peirce's speculations about the essential role of chance in cosmic evolution anticipated some twentieth century scientific insights, and tentatively suggested that the ever-emergent openness and novelty that characterizes the universe may in some sense be ontologically grounded in the intra-Trinitarian freedom of the Father, who is the ground of all potentiality and Firstness within the Trinity. Finally, I suggested that the 'given-ness' of the world, its being this way rather than that way, and the manifestation of this given-ness in our creaturely experience of the constraints of existence, is a function of the creative work of the Word, the eternal principle and ground of otherness within the Trinity. According to this view, the scientific theme of evolutionary naturalism and Peirce's corre-sponding concept of evolution by necessity, may likewise be under-stood in a Trinitarian perspective.

In the following sections I shall attempt to specify more precisely the way in which, by combining my semiotic model of the Trinity with the idea of the mediation of creation by the Word and Spirit, the fundamental structures and patterns of the cosmos may be under-stood as bearing the imprint of the Triune creator.

5.3   *Vestiges of the Trinity in Creation*

5.3.1   *Analogy, Likeness, or Vestige?*

What is the nature, then, of the relation between the triadic patterns of the world that are picked out in Peirce's semiotics, metaphysics, and evolutionary cosmology, and Christian thinking about God as Trinity? In Chapter 2 I used terms such as model, analogy, and parallel, to indicate the possibility of making connections between Peircean philosophy and Trinitarian theology. My task in that chapter was to show how Peirce's categories and semiotics might cohere with, and fruitfully develop, certain aspects of traditional thinking about God as Trinity. The direction of the argument was, in a sense, from the world to God, though (as I shall discuss in more depth in Chapter 6, §6.2) this does not imply that any theological insights thereby obtained do not ultimately originate in God's own gracious self-revelation to the world. The time has come to consider more closely a range of logically possible options for understanding the epistemological and ontological basis of these apparent similarities between the triadic patterns of the world and the triune being of God. I shall suggest that the three main options for such an understanding are covered by the terms analogy, likeness, and vestige. Each of these terms will be carefully (re-)defined for use in the present context. For clarity, in order to keep the argument in this section tightly focussed, I shall restrict the discussion of analogies, likenesses and vestiges in this section to the question of the relation between Secondness within the created order and the intra-Trinitarian otherness of the Son from the Father. In the following section I shall extend the discussion to the role of the Spirit in creation and the relation of this to Thirdness in the world.

Let us start with the concept of an 'analogy'. The concept of analogous relations between meanings, ideas or things has a long philosophical history, traceable at least back to Aristotle, and developed theologically by Aquinas.[73] The question that hangs over all analogies for the being of God is whether they should be understood 'equivocally' (where the same term or concept is used of different beings in different ways) or 'univocally' (where the term or concept is applied

---

[73]   James Ross, "Analogy," in *The Oxford Companion to Christian Thought*, ed. Adrian Hastings, Alistair Mason, and Hugh Pyper (Oxford: Oxford University Press, 2000).

in exactly the same way to both kinds of being). Aquinas attempted to steer a middle course, arguing for continuity between some predications made of both creatures and God without implying an exact identity.[74] Aquinas's view that the 'analogy of being' reflects such genuine continuities runs counter to the instincts of many (perhaps most) contemporary theologians, who generally incline towards denial of the direct or literal applicability of human words and concepts to God. Barth's substitution of the idea of the 'analogy of faith' for Aquinas's 'analogy of being' is one reflection of this tendency.[75]

I wish to partially detach the term 'analogy' from its long theological history and use it in a more everyday sense that is perhaps closer to the majority view of contemporary (non-Thomist) theologians. Thus I propose to use the term to label the weaker end of the spectrum of understandings of putative similarities between the world and God. Specifically, I wish to use 'analogy' to cover similarities that are merely perceived as such by human (or other creaturely) minds. Placing the concept of analogy at the weaker end of the spectrum is perhaps more in keeping with current biological usage than with Aristotelian or Thomist thinking. In biology, two structures are said to be analogous if they are similar to one another but not related by inheritance. The whale's flippers are 'homologous' to human limbs because, by virtue of their common ancestry, they share the same organization of bones. The tentacle of an octopus, in contrast, is only 'analogous' to a human limb: tentacles and arms have similar functions but are not related by descent. According to the usage I wish to adopt, to say that worldly instances of otherness are analogous (rather than homologous) to the intra-Trinitarian otherness of Father and Son would imply that any apparent parallel between otherness in the world and otherness within the being of God must be regarded more as a product of our creaturely minds than as reflecting a reality about God.[76]

---

[74] Joseph P. Wawrykow, *The Westminster Handbook to Thomas Aquinas* (Louisville: Westminster John Knox, 2005), 43. From the semiotic perspective it is interesting that Aquinas set out this middle way by using a distinction between the *res significata* and the *modus significandi*. See also William C. Placher, *The Triune God: An Essay in Postliberal Theology* (Louisville: Westminster John Knox, 2007), 17.

[75] Ross, "Analogy," 15.

[76] I do not wish to press the parallel with biological usage too far: I introduce it merely to underscore the fact that I wish to use the term 'analogy' to label the weaker end of the spectrum of theological understandings. My 'analogy' (!) of biological

A stronger understanding of the basis of supposed similarities between the world and God may be labelled by the term 'likeness'. The distinction I wish to make between a (mere) analogy and a likeness is that, in the latter case, the similarity is hypothesized to be real, in the sense of having been intentionally created by God so as to actualize a genuine correspondence. Thus instances of worldly Secondness would be considered 'likenesses' of the otherness of the Son from the Father if such instances were held to be genuinely ontologically equivalent to the intra-Trinitarian distinction between the Father and the Son.

A more familiar example of a case of a 'likeness' in the Christian tradition is found in the idea of the *imago dei*. The key biblical source for the doctrine is Genesis 1:27: "So God created humankind in his image, in the image of God he created them; male and female he created them". What exactly constitutes the image of God in human beings is, of course, a matter of debate. But however the image and likeness is understood, implicit in the text from Genesis is the idea that the image in question is constituted as an image of God because God chose to create it so. In the preceding verse we read that, "God said, 'Let us make humankind in our image, according to our likeness'". It is not clear whether "image" and "likeness" are intended to convey different nuances of meaning here. Nevertheless, the co-occurrence of the terms image and likeness in this key text could be read in a way that coheres with the usage I am suggesting, according to which the term 'likeness' covers a general class of similarities between the world and God (those intentionally created so by God) of which the human imaging of God is a specific example.

Apophatic humility may incline the cautious theologian to prefer the concept of analogy to the epistemologically and ontologically stronger concept of likeness (as defined above) as the default understanding of the status of creaturely speech about God. I suggest, however, that there is a danger here of adopting a misguided and unproductive form of theological modesty. The only grounds for holding that finite creatures have the capacity to say *anything* about

---

analogy / homology to theological analogies breaks down in that analogous biological structures are linked by real commonalities of function. Furthermore, homologous biological structures are *causally* connected by their common evolutionary history which makes them in some ways equivalent to the theological concept of 'vestiges' to be developed below.

the infinite creator must be that the creator has created the world in such a way that creatures have such a capacity. If it is not possible, or acceptable, to hypothesize such a capacity then any talk about God must be foolishness; writing books on philosophical theology particularly so. But once the theological necessity to postulate a God-given capacity for truthful God-talk is recognized then it would be presumptuous to assume that God *would not* have created a world in which creaturely speech about God could draw on genuine likenesses between aspects of the world and the patterns of God's own being and creative activity. In short, an otherwise laudable tendency to apophaticism does not provide good theological grounds for preferring to regard putative similarities between the world and God as analogies rather than likenesses. If the world contains likenesses to the creator then it does so as part of God's gracious gift to creation. It is not for creatures to tell God whether such a gift would be appropriate.

A yet stronger understanding of the basis of putative similarities between the world and God is found in the concept of the 'imprint' of God in creation or, to use the more traditional terminology, the idea of 'vestiges' of God in creation. As with the concepts of analogy and likeness, I wish to draw on the vestiges idea and creatively to develop it in a way that remains in continuity with tradition.

The idea of looking for 'vestiges of the Trinity' in creation is often traced to Augustine's counsel in Book VI of *The Trinity*:

> So, then, as we direct our gaze at the creator by *understanding the things that are made* (Rom. 1:20), we should understand him as a triad, whose traces [*vestigia*] appear in creation in a way that is fitting.[77]

Augustine's vestiges concept represented a departure from earlier Christian thought on the *imago dei*. The image of God had previously been taken to refer to a likeness between the human person and *one* of the divine persons: specifically, a likeness of human being to the Son, and via the Son, to the Father. Augustine's concept, in contrast, implied that the image of God might be taken to be a likeness between an aspect of human being and the *whole* Trinity.[78] Augustine

---

[77] Augustine, *The Trinity*, ed. John E. Rotelle, trans. Edmund Hill, *The Works of Saint Augustine: A Translation for the 21st Century* (New York: New City Press, 1991), VI.12.

[78] F. L. Cross and E. A. Livingstone, *The Oxford Dictionary of the Christian Church*, 3rd ed. (Oxford: Oxford University Press, 1997), 820.

has been much criticized for locating this likeness in human rationality, as reflected in his famous psychological analogies (which I shall discuss further in §§7.1.1–7.1.2). Equally significant, I suggest, is the fact that Augustine, and indeed the whole subsequent tradition of thinking about the vestiges, may have underestimated the concept's potential as a way of understanding the relation between God and creation.

The term *vestige* is often translated as "trace", with the implication of a rather weak or tenuous connection between the thing in question and its origin. In biology 'vestigial organs', such as the appendix, are structures that once served an adaptive purpose but which are now non-functional, their persistence happening to provide clues about their evolutionary origins. However, the Latin *vestigium* may also mean a 'mark' or 'imprint', or, more specifically, a 'footprint'.[79] To suggest that something is a vestige of the Trinity might therefore be taken to mean not only that there is a likeness between that thing and God (as defined above), but also that the likeness occurs *by virtue of the manner in which that thing has been created.*

It is not clear that Augustine had this kind of understanding in mind in the passage quoted above, since he does not attempt to connect his discussion of the vestiges there with his reflections on the Trinitarian mediation of creation.[80] Aquinas held that whereas the full image of God was to be found in the faculties of knowing and willing possessed by rational creatures, in other creatures there are *lesser* resemblances, *mere* vestiges or traces of the creator.[81] It appears, in other words, that Christian theology has tended to regard any 'vestiges' of the Trinity as somewhat weaker kinds of similarity than is implied in the concept of the *imago dei* (and weaker, therefore, than my more general concept of 'likenesses' of the creator). I propose, in contrast, to place the vestiges concept at the strongest possible end of the spectrum of epistemological and ontological options. Where a similarity between the world and God is taken to be a vestige of the creative process then the similarity in question is, I suggest, not only a likeness of God (an intentionally created resemblance) but also a consequence of – an imprint of – the very act of creation.

---

[79] David S. Cunningham, *These Three Are One: The Practice of Trinitarian Theology* (Oxford: Blackwell, 1998), 91.
[80] cf. Augustine, *The Trinity*, I.9.
[81] Wawrykow, *Thomas Aquinas*, 73.

How would this strong understanding of the vestiges concept be applied to instances of otherness (Secondness) within the created order? In §5.2.3 I introduced the idea of the Trinitarian mediation of creation and I outlined how, in the light of the concept of the mediation of creation by the Word, the otherness of the world from God may be held to be 'grounded' in the otherness of the Word from the Father. In the terminology I have been using, this implies that the distinction between God and the world is a real 'likeness' of the intra-Trinitarian distinction between the Father and the Son. We are now in a position to clarify and extend our understanding of the basis of the 'grounding' of this likeness. I suggest, in short, that the absolute distinction between God and the world is not merely a likeness – something modelled on – the otherness of the Son from the Father. Rather, the otherness of the created order is a 'vestige' of its manner of creation: "All things came into being through him [the Word], and without him not one thing came into being" (John 1:3). The otherness of the world from God therefore bears the imprint of the manner of its creation: its otherness from God is grounded in *by virtue of being a vestige of* the otherness of the Word from the Father.

This much does not step far beyond Irenaeus's notion of the Trinitarian mediation of creation, as explored and developed by Gunton (see above, §5.2.3). Its novelty lies, perhaps, in the way in which (by virtue of the context of my wider semiotic model of the Trinity) it places the idea of the mediation of creation by the Word within a more comprehensive theological-metaphysical framework. But a further hypothesis then suggests itself: that every instance and form of otherness (Secondness) *within* the created order is, likewise, a vestige of the creative work of the Word, the eternal otherness of the Son from the Father.[82] Some examples may help to spell out what I have in mind. Consider the otherness of the black letters on this page from the background whiteness of the paper. This otherness is, I suggest, dependent on, and a vestige of, the creative work of the Second Person of the Trinity. Consider the physicality of the book that you are (probably) holding. It has weight and solidity; if you put it on a table

---

[82] See A. J. Robinson, "A Semiotic Model of the Trinity: God, Evolution and the Philosophy of Charles Sanders Peirce" (Ph.D. diss., University of Exeter, 2003), 318–24; Andrew J. Robinson, "Continuity, Naturalism and Contingency: A Theology of Evolution Drawing on the Semiotics of C.S. Peirce and Trinitarian Thought," *Zygon: Journal of Religion and Science* 39, no. 1 (2004): 127.

it will not melt into the table-top but will rest on the surface. The book is other than the table, the actuality of their distinction from one another being a vestige of the work of the Word. And consider any disagreements that you have with my thesis. The difference between your opinion and mine (not the opinions themselves, but the possibility of their differing from one another) is a vestige of the sustaining of differences in the created order by the Son, who is the intra-Trinitarian ground of otherness from the Father.[83]

Of course it would be logically possible to hold that the absolute otherness of the world from God is a consequence of the world having been created through the Word without also holding that instances of otherness (Secondness) *within* the world reflect the imprint of the creative work of the Word. And it would be logically possible to hold that both the otherness of the world from God and all instances of otherness within the created order are likenesses of the intra-Trinitarian otherness of Father from Son but not vestiges of the Trinity in creation. The plausibility of my 'strong' appropriation of the vestiges hypothesis must therefore be evaluated on grounds such as its overall theological coherence and fruitfulness, including the question of whether it implies unacceptable limits to God's sovereignty by privileging human epistemological capacities above God's absolute ontological priority over the world. In §5.3.3 I shall offer some positive reasons for regarding the vestiges hypothesis as theologically attractive, and I will respond to one form of the objection that the vestiges hypothesis conflicts with an affirmation of God's absolute transcendence.[84] First, however, we must see how, in the light of the vestiges concept proposed here, the structure of the created order might be understood to bear the imprint of the work of the Spirit alongside that of the creative activity of the Word.

5.3.2 *Two Hands of God*

In the passage cited in §5.2.3, Irenaeus refers to the mediation of creation by the Son and Spirit in terms of the actions of the "hands" of

---

[83] In this last example I risk being suspected of advocating a Hegelian account of the progress of reason in terms of thesis-antithesis-synthesis. On the differences between Peirce and Hegel see §1.2.3.

[84] In Chapter 6 (§6.2) I offer a more detailed defence of my hypothesis from the point of view of the question of the legitimacy of the method of 'natural theology'.

God.[85] The question arises, do the two hands of God each have a distinctive role in God's creative work? I wish to develop the concept of the Trinitarian mediation of creation in a way that goes beyond Irenaeus's picture of the hands of God. Specifically, I suggest that the work of the Son and Spirit in creation may be differentiated as the basis of the 'imprint', respectively, of Secondness and Thirdness within the created order. In my development of a 'semiotic model' of the Trinity (Chapter 2) I explored the apparent similarities between Peirce's category of Secondness and traditional Christian thinking about the Son / Word, and between the category of Thirdness and traditional thinking about the Spirit. In the previous section of the present chapter I have proposed that role of the Son in creation may be understood as that of providing the basis of the *distinction* (Secondness) between God and creation, and I further hypothesized that the Son may, in addition, be understood as the source of the 'imprint' of all Secondness *within* the world. I thus suggested that every instance of otherness and distinction within the created order may be understood as vestiges of the Trinity – specifically, of the Second Person of the Trinity – in creation. In this section I propose a parallel hypothesis regarding the role of the Spirit in creation.

I suggest, then, that the role of the Spirit in creation may be regarded as that of *mediating* between God and the world, bringing into relationship that which would otherwise be separated by the otherness of Secondness. This coheres with the scriptural witness, according to which God enters the world in the Incarnation through the mediation of the Spirit (Matt. 1:20; Luke 1:35) and the reconciliation of the world to God is regarded as a function of the Spirit (e.g., Rom. 8:1–27). I hypothesize, further, that just as the Son may be understood as both the basis of the distinction between God and creation *and* as the 'imprinter' of all distinctions (Secondness) *within* creation, so the Spirit may be understood as the ground of mediation between God and creation *and* as the 'imprinter' of all mediation (Thirdness) *within* the created order. In that sense all instances of mediation, continuity, generality, purpose, and signification within the world may be understood as bearing the imprint of the creative work of the Spirit. Of course, I use the terms 'imprint' and 'imprinter' here in a non-literal sense: the idea they are intended to convey is that the

---

[85] *Adversus Haereses* 4.20.1. Irenaeus, *Writings*, 439.

creative roles of the Son and Spirit go beyond that of providing a passive 'model' for their 'likenesses' in the created order. Rather, the Son and Spirit, I hypothesize, are each active in shaping and pattern-ing the created order according to their respective likenesses.

The idea that, in the context of the concept of the Trinitarian mediation of creation, distinct roles can be discerned for the Son and the Spirit can be found in the work of Wolfhart Pannenberg and Jür-gen Moltmann, two contemporary theologians who are notable for endeavouring to articulate a Christian doctrine of creation in the light of current science. Drawing on G.W.F. Hegel's Trinitarian meta-physic, Pannenberg suggests that the idea of the Trinitarian media-tion of creation implies that, "In the Son is the origin of all that differs from the Father, and therefore of the creatures' independence vis-à-vis the Father".[86] This coheres with my Peircean way of putting it, according to which the otherness of the world from God is grounded in the otherness of the Son from the Father. Pannenberg goes on to suggest that the Logos may be understood as the source of all distinctions *within* creation, as well as the absolute distinction between creator and creature: "It would be in this way that the Logos would work *as the generative principle of the diversity (and therefore plurality) of* creatures".[87] Pannenberg thus understands the Trinitar-ian basis of the otherness of the world from God, and of all otherness within the created order, in a way that coheres with my strong ver-sion of the vestiges hypothesis. Moreover, Pannenberg wishes to identify a distinct creative role for the Spirit: "His [the Spirit's] work-ing, then, is closely related to that of the Son, though characteristi-cally different":

> For the independence and distinction of the creatures relative to God goes back to the self-distinction of the Son, but the Spirit is the element of the fellowship of the creatures with God and their participation in the divine life, notwithstanding their distinction from him.[88]

We may ask, then, what is the relationship between the work of the Son and the Spirit in creation? Pannenberg notes here a paucity of

---

[86] Pannenberg, *Systematic Theology Volume 2*, 22; see also Wolfhart Pannenberg, *Systematic Theology, Volume 1*, trans. Geoffrey W Bromiley (Grand Rapids: Eerd-mans, 1991), 277.

[87] Pannenberg, *Systematic Theology Volume 2*, 6, italics mine.

[88] Ibid., 32.

direct biblical references.[89] Intriguingly, although Pannenberg's attempt to answer this question begins from his own notion of the Spirit as a "field of force", he seeks to understand the joint working of the Son and Spirit in terms of the role of *information*. According to Pannenberg, while the Son's work in creation is that of establishing "the distinctiveness of each creaturely form as opposed to others and to God the creator", the work of the Spirit is to bring creative novelty into this world of distinct entities by acting as the ground of informational processes:

> …it is from the Spirit's dynamic, according to the relations of the Logos, that the distinct, independent, and self-centered form of creaturely operation arises. *The event of information constitutes the transition*.[90]

When Pannenberg uses the term 'information' here he appears to have in mind something closer to the mathematical concept of information rather than an explicitly semantic or semiotic understanding (see §4.1.2 for a discussion of the possibility of confusing these concepts). Nevertheless, the overall pattern of Pannenberg's thought seems to be broadly similar to the kind of development of the idea of the Trinitarian mediation of creation that I am proposing. Thus Pannenberg discerns distinctive creative roles attributable to the Son (the source of all distinctions; cf. Secondness) and the Spirit (the ground of the form of creaturely selfhood that is constituted by the emergence of 'information'; cf. Thirdness).

Moltmann, like Pannenberg, holds that the doctrine of creation should be developed in Trinitarian terms.[91] In *The Trinity and the Kingdom of God*, Moltmann leaves it somewhat unclear what should be understood by the statement that the Son and Spirit are the 'mediators' of creation, or how the two may be understood to act together.[92] In his later work, *God in Creation*, he is more specific – each of the Trinitarian persons has a distinctive role:

> The one who sends the Son and the Spirit is the creator – the Father. The One who gathers the world under his liberating lordship, and redeems it, is the Word of creation – the Son. The One who gives life

---

[89] Ibid., 109–10.
[90] Ibid., 110. Italics mine.
[91] Moltmann, *Trinity and the Kingdom*, 102.
[92] Ibid., 102–05. Moltmann does develop ideas about the life-giving and eschatological roles of the Spirit on pp. 122–126.

to the world and allows it to participate in God's eternal life is the cre-
ative Energy – the Spirit. The Father is the creating origin of creation,
the Son its shaping origin, and the Spirit its life-giving origin.[93]

A specific role that Moltmann attributes to the Word is that of the
introduction of *separation* in the created order:

> The act whereby God introduces order through separation belongs to
> the event of God's creative utterance. God confers order on his creation
> by dividing light from darkness, heaven from earth, day from night.
> Through this separation the works of his creation acquire identifiable
> form, rhythm and symmetry.[94]

As noted above in the context of Pannenberg's theology of creation,
this role of the Word in introducing distinctions within the created
order corresponds to the origin of worldly Secondness in my semi-
otic approach. In contrast to Pannenberg, however, Moltmann's main
focus in developing a theology of the Trinitarian mediation of cre-
ation is on the role of the Spirit rather than that of the Son.[95] The
characteristics of the role of the Spirit in Moltmann's account corre-
spond, I suggest, to Peirce's category of Thirdness. Thus the Spirit is,
according to Moltmann, the source of *life* and the basis of *relation-
ship*. As such it is the Spirit who is the ground of "that *fellowship* of
creation in which all created things *communicate* with each other and
with God, each in its own way".[96] Human consciousness is an aspect
of a general presence of spirit in nature, spirit being the name given
"to the forms of organization and modes of communication in open
systems", whether in "informed matter", living systems, or "the whole
complex of galaxies in the universe".[97] The Spirit is to be understood
as "the real interpreter" of scripture; indeed, the Spirit is the source
of all interpretation, and therefore of all knowledge and all acts of
knowing.[98]

---

[93] Jürgen Moltmann, *God in Creation*, 97–98.
[94] Ibid., 77.
[95] Ibid., 9.
[96] Ibid., 11. Italics mine.
[97] Ibid., 17. cf. Peirce's idea of a world 'perfused with signs', §1.1.
[98] Jürgen Moltmann, *Experiences in Theology: Ways and Forms of Christian Theol-
ogy* (Minneapolis: Fortress Press, 2000), 145. Moltmann draws attention to scriptural
support for this assertion; for example, John 16:13–14 ("he [the Spirit] will guide you
into all the truth; for he will not speak on his own, but will speak whatever he hears,
and he will declare to you the things that are to come"); and 1 Cor. 12.3 ("no-one can
say 'Jesus is Lord' except by the Holy Spirit").

The contribution of the New Testament to the doctrine of creation, according to Moltmann, is to place the doctrine in an eschatological framework in which the Spirit is the basis of the *new* creation.[99] The Spirit is the principle of *creativity* and *evolution*, who at every evolutionary stage "creates interactions, harmony in these interactions, mutual perichoreses, and therefore the life of co-operation and community". The Spirit is the basis of the openness of systems to the future, expressed by St. Paul in terms of the "longing" or "sighing" for the future (Rom. 8:19; 8:26).[100] Moltmann discusses this elsewhere in terms of creation being underpinned by "the logic of promise".[101]

All of these characteristics of the Spirit's role in creation cohere with the category of Thirdness, in that they manifest the phenomena of mediation, interpretation, knowledge, community, and purposeful orientation to the future. In fact Moltmann, like Pannenberg, suggests that the Spirit may be associated with the concept of 'information':

> Through his Spirit God himself is present in his creation. The whole creation is a fabric woven and shot through by the efficacies of the Spirit. Through his Spirit God is also present in the very structures of matter. Creation contains neither spirit-less matter nor non-material spirit; there is only *informed* matter. But the different kinds of information which determine the systems of life and matter must be given the name 'spirit'.[102]

In spite of these parallels between Moltmann's account of the creative role of the Spirit and Peircean Thirdness, we must note that Moltmann also refers to the Spirit as having a role in bringing about "individuation", and "differentiation",[103] phenomena that in the semiotic model would be regarded as characteristics of Secondness, and therefore as functions of the Logos / Son. Similarly, while Pannenberg's account of the role of the Son as the source of all distinctions in creation has clear parallels with Peircean Secondness, he nevertheless also attributes to the Son the sort of ordering of the entities thereby distinguished that, in the semiotic model, would be associated with the Spirit.[104] It is important to emphasize, therefore, that I have highlighted

---

[99] Moltmann, *God in Creation*, 65.
[100] Ibid., 101–02.
[101] ——, *Experiences in Theology*, 109–12.
[102] ——, *God in Creation*, 212.
[103] Ibid., 100–03.
[104] Pannenberg, *Systematic Theology Volume 2*, 62.

here the similarities between Pannenberg's and Moltmann's approaches
and my own in order to support the general shape of my argument
rather than to suggest an exact agreement in details.

In summary, by offering accounts of how the Son and the Spirit
each has a distinctive role in creation, the approaches of both Pan-
nenberg and Moltmann to the Trinitarian mediation of creation go
some way to developing Irenaeus's rather undifferentiated notion of
the two 'hands' of God. In each of their approaches there are similar-
ities to roles that I wish to attribute to the Son and Spirit in the light
of the semiotic model. However, compared with these two recent
Trinitarian theologies of creation, the semiotic model offers, I sug-
gest, a clearer demarcation between the role of the Son and the Spirit.
Furthermore, the semiotic approach offers a way of clearly connect-
ing this differentiation of roles in the Trinitarian mediation of cre-
ation with the conceptual and historical basis of the doctrine of the
Trinity itself (Chapter 2). Thus the Son, who is the principle of differ-
ence and otherness from the Father (Secondness), is also the origin
of distinction *between* God and creation, and the 'imprinter' of all
distinctions *within* the created order. The Spirit, who is the principle
of mediation between the Father and the Son, is also the source of
mediation *between* God and creation, and the 'imprinter' of all medi-
ation *within* the created order.

The semiotic model is therefore able to affirm that the mediation
of creation by the Son and Spirit is not, as Irenaeus's picture of the
two "hands" of God might imply, a symmetrical act by two subordi-
nate instruments of the Father. Rather, the Son and Spirit have dis-
tinctive roles in creation that are concordant with their logically
ordered but ontologically non-hierarchical relations to each other and
to the Father in the eternal being of God. Finally, it is worth noting
that, whereas I have been willing to call the Son and Spirit the
'imprinters' of Secondness and Thirdness respectively, I would hesi-
tate similarly to call the Father the 'imprinter' of Firstness. As I men-
tioned in §2.4.2 in the context of the idea of the perichoresis of the
categories, and developed further above in my discussion of the ubiq-
uity of Firstness in the world (§5.2.2), new kinds of Firstness are
ever-emergent from the matrix of Secondness and Thirdness. I shall
suggest, in §7.2.1, that this likeness in the world to the Trinitarian
freedom of the person of the Father is an aspect of the 'goodness' of
the created order. As such, it seems more appropriate to speak of the
Father as the ground of the possibility of Firstness in creation, than

to say that the Father 'imprints' Firstness into the world. Interestingly, and perhaps not coincidentally, this coheres with Irenaeus's image of the two (rather than three) hands of God as the mediators of creation.

5.3.3 The Immanent and Economic Trinity

Let us return, then, to the question raised at the end of §5.3.1. Is the version of the vestiges hypothesis that I have been developing in this chapter theologically fruitful? To answer this question it is helpful to consider some of the logically possible relations that might obtain between the idea of the Trinitarian mediation of creation introduced in §5.2.3 and the concepts of 'likeness' and 'vestige' defined in §5.3.1.

To begin with, there is the logical possibility that God could have chosen to create a universe that bore within it no likenesses whatsoever to God's own being. To suggest otherwise would appear to limit God's sovereign freedom in creation. That being the case, the presence of likenesses to God in creation (including the human likeness to God understood in the light of Gen. 1:27) must therefore be regarded as an aspect of God's gracious gift to the created order.

If God *has* granted creation the benefit of bearing likenesses to God's self, must such likenesses necessarily have been formed by virtue of bearing the imprint of the manner of their creation (i.e., must such likenesses of the creator necessarily be 'vestiges' of their mode of creation) or, alternatively, could God have created likenesses of the Trinity without those likenesses reflecting their mode of creation? Again, any denial of this latter possibility appears to place external constraints on God's creative power. Indeed, my own account does not imply that *all* likenesses to God within the created order are vestiges of the Trinitarian mediation of creation. My hypothesis, rather, is specifically that the fundamental threefold pattern of the created order picked out by Peirce's categories is a mark of the work of the triune creator. Other likenesses, such as humans in general as the *imago dei*, or the person of Jesus as the perfect image of God the Father (see §3.1), are perhaps better regarded as arising out of this substratum of the triadic patterning of the created order.[105]

---

[105] The way in which the goodness of creation may be understood to reside partly in the emergence of Firstness from the matrix of Secondness and Thirdness will be reflected upon further in §7.2.1.

A further question is whether God could have created anything without the mediation of God's two 'hands', the Word and Spirit? The considerations outlined in §5.2.3 would suggest otherwise: it is by virtue of being created 'through' the Word that the world is granted its genuine otherness from God. We must suppose, therefore, that God could only create a world genuinely distinct from God's self by the mediation of the Word, the ground of otherness within the eternal Trinity. This need not be taken as a restriction on God's sovereignty since it does not entail a denial that God was free to choose whether or not to create; moreover, it does not place the ground of the principle of otherness, which is the prerequisite of the existence of a world distinct from God, outside the being of God. Perhaps we can imagine that creation could logically take place through the Word but not through the Spirit. In that case there would be no possibility of the world, once created, being in any ongoing relation to its creator since, according to the semiotic model, it is the Spirit's creative work that mediates between God and the world. That, perhaps, is the scenario implicit in both deism and atheism.

Finally, we may ask whether it would have been possible for creation to take place by means of the mediation of the Son and Spirit without leaving vestiges of the Trinity in the product. I am inclined to answer yes to this question: God should not be imagined to be less skilful than a competent potter who is able, after all, to create a pot without leaving her fingerprints on the finished piece. In that case, we must ask why God would have chosen to imprint God's own pattern of being on the created order? And why might it be theologically generative to entertain the hypothesis that the world exhibits vestiges of the Trinity in its structures, patterns, and processes? I have suggested above that if the Trinitarian mediation of creation occurs in such a way that the world is shaped and patterned by the imprint of the Word and Spirit, then this must be held to be an aspect of God's chosen purposes for creation, a voluntary and intentional aspect of God's creative work. In what sense, then, could the presence of vestiges of the Trinity in creation be understood to reflect God's good purposes for creatures? The answer, I suggest, is that it supports an affirmation of what one might call an *intrinsic* connection between the eternal triune being of God and God's self-communication, the revelation of God's-self, in the economy of creation and salvation.

The importance of recognizing such an intrinsic connection is summed up in Karl Rahner's famous axiom: "the 'economic' Trinity

is the immanent Trinity and the 'immanent' Trinity is the 'economic' Trinity".[106] According to Rahner, a symptom of the isolation of the doctrine of the Trinity from the rest of Christian thinking has been a reluctance to consider the possibility of the presence of vestiges of the Trinity in creation:

> This isolation is considered legitimate, since the "outward" divine operations are "common" to the three divine persons, so that the world as creation cannot tell us anything about the inner life of the Trinity. The venerable classical doctrine of the "vestiges" and the "image of the Trinity" in the world is thought to be – although one would never explicitly say so – a collection of pious speculations, unobjectionable once the doctrine has been established, but telling us nothing, either about the Trinity itself or about created reality, which we did not already know from other sources.[107]

Rahner does not claim that we can assert *a priori* that vestiges of the Trinity will be found in creation. Nevertheless, to suppose that there cannot be any such traces of the Trinity would be to accede to a kind of Trinitarian theology that "has no integral place in the world and in salvation history".[108] When theology comes to see in God's relation to the world "only the appropriated relations of the divine persons," Rahner argues, then "we have nothing to do with the mystery of the Holy Trinity except that we know something 'about it' through revelation".[109] This has led to a situation, Rahner suggests, in which "We must be willing to admit that, should the doctrine of the Trinity have to be dropped as false, the major part of religious literature could well remain virtually unchanged".[110]

Admittedly Rahner may well have in mind here an understanding of the vestiges concept that is rather 'weaker' than my own; that is, in my terminology, he may regard putative vestiges of the Trinity more

---

[106] Karl Rahner, *The Trinity*, trans. Joseph Donceel, with an Introduction, Index and Glossary by Catherine Mowry LaCugna (New York: Crossroad Herder, 1999), 22. I do not think that Rahner uses the word 'intrinsic' directly in relation to the axiom concerning the immanent and economic Trinity in this work, but he does use it in connection with the vestiges concept (14–15). Elsewhere he laments the 'extrinsicism' that characterizes much thinking about the relation between nature and grace. Karl Rahner, *Theological Investigations*, 2nd ed., vol. 1 (London: Darton, Longman & Todd, 1965), 303.

[107] Rahner, *The Trinity*, 13–14.

[108] Ibid., 21.

[109] Ibid., 14.

[110] Ibid., 10–11.

as likenesses than as imprints of the creative work of God. Neverthe-
less, his point would be even more compelling if it were pressed by
advocating the ontologically stronger claim. In order to see why, it is
worth expanding on the idea of an 'intrinsic' relation between the
structure of the world and the inner being of God.[111] First, I suggest
that an affirmation that the world is structured and patterned by the
ongoing work of the Word and Spirit emphasizes the *immanence* of
God's continuous creative activity. If the structures of the created
order were merely a likeness of the triune being of God then God
might yet have to be regarded as a distant and inaccessible creator.
On the other hand, if the moment-to-moment structuring of the
world by the categories of otherness and mediation – of Secondness
and Thirdness – are held directly to reflect the creative roles of the
Word and Spirit, then the creative work of God must be understood
to be immanent in every instant and every aspect of the created
order. The 'intrinsic' relation between the immanent and economic
Trinity is thus also an 'intimate' relation, an idea to which I shall
return in the following chapter (§6.3.2).

Second, if the Word and Spirit are directly and continuously
involved in sustaining every moment of created reality, a reality
whose possibility is grounded in the Father as the ground of all pos-
sibility, then the work of creation must be considered to concern and
occupy the *fullness* of God's being. Creation is not merely God's
hobby. This does not imply that the act of creation, or the existence
of the world, are *necessary* to God's being. Rather, it means that, when
God chooses to create, God gives God's-self fully to the work.

Third, the direct involvement of Word and Spirit in imprinting the
patterns of the created order implies that God gives God's-self to that
creative work *authentically*. That is to say, the patterns of the created
order reflect God's very being: God has not chosen to give God's-self
to creation in any form other than as God's true self. This applies
both to God's self-revelation in Christ and to the gift of God's cre-
ative work in the structures of the created order from which that ulti-
mate manifestation of God's self-communication to creation emerges.
According to my strong version of the vestiges hypothesis, the roles
of the Word and Spirit that can be discerned in the light of the semi-
otic model of the Trinity – the roles, respectively, of grounding all

---

[111] Cf. Ibid., 15.

Secondness and Thirdness in the created order – are not to be under-stood as merely *appropriated* to those persons, but are proper to them and non-interchangeable. As Rahner puts it:

> Average theology…sees in divine grace only the appropriated relations of the divine persons to man, the effect of an efficient causality of the One God. In final analysis, all these statements say explicitly in cold print that we ourselves have nothing to do with the mystery of the Holy Trinity except to know something "about" it through revelation.[112]

In short, understanding the processes of semiosis and the three underlying ontological categories as vestiges of the Trinity in creation enables the semiotic model to uphold the intrinsic (immanent, full, and authentic) relation between the immanent and economic Trinities.

My strong version of the vestiges hypothesis inevitably invites an objection. If the categories of Firstness, Secondness and Thirdness are thought of as vestiges of the Trinity, is not the being of God reduced to something on the same ontological level as the created order itself? To put it another way, does the vestiges concept fail to acknowledge the infinite qualitative difference (Kierkegaard's phrase)[113] between God and creation? The language of 'imprinting' employed above (albeit with caveats to emphasize the limitations of such language) certainly risks being interpreted in this way. As F. LeRon Shults has put it, the problem with the vestiges concept (and with my version in particular), 'is that it too easily leads to a *formal* construal of the divine (the infinite) and the creaturely (the finite) as two terms opposed and bound to each other within a broader logical…category that comprehends them both'.[114]

While acknowledging the force of Shults's criticism, and recognizing that in earlier formulations of the vestiges idea I may not have guarded sufficiently against such an implication, I suggest that the notion of the vestiges can be articulated in a way that affirms the incommensurability of the infinite creator and the finite creation. Two points are especially important in this regard. The first concerns the place of Peirce's category of Secondness in affirming the absolute

---

[112] Ibid., 14.

[113] Søren Kierkegaard, *Practice in Christianity*, Edited and Translated with Intro-duction and Notes by Howard V. Hong and Edna H. Hong (1850, Princeton: Prince-ton University Press, 1991), 28–29.

[114] F. LeRon Shults, "Transforming Theological Symbols," *Zygon: Journal of Reli-gion and Science* 46, no. 3 (2010): 725.

ontological asymmetry of the God-world relation. According to the semiotic model, it is by virtue of its being created through the Word, the source of otherness within the Trinity, that the created order is given an *absolute otherness* from God (§5.2.3). At the heart of the semiotic model, therefore, is the very resource that is required to affirm the absolute distinction between the Creator and the created. The danger of failing to acknowledge the infinite qualitative difference between the world and God may be thought of, I suggest, as a failure to recognize that not all otherness is of the same kind. In other words, there is an 'otherness of otherness'. The varieties of otherness within the created order are numerous, but they are all essentially the same kind of otherness in the sense that they are all instances of difference between created things. But these instances of otherness within the world are what point us towards the possibility of an absolute form of otherness; the otherness of creature from creator. Affirming a real relation between, on the one hand, the intra-Trinitarian otherness of Father from Son and, on the other, instances of difference between created things, does not entail a denial of the absolute otherness of God from the world. Indeed, if it were not possible to move from our perception of distinctions in the world to some understanding of the difference between creation and creator it would be meaningless to speak of the transcendence (absolute otherness) of God.

The second point, which is related to the first, is that an inherent feature of my proposal as a whole is that the categories of Firstness, Secondness and Thirdness are not understood to have any reality prior to the reality of God's own triune being. Thus in §2.4.2 I argued that the semiotic model of the Trinity is able to give an account of the intra-Trinitarian relations that allows us to see why the three different kinds of relation have their ground and source within the being of God. A consequence, I suggest, is that the stronger the ontological connection that is supposed between the being of God and the patterns of the world, the lower the risk of reducing our understanding of God to that of being just one entity among others. This is because a realist understanding of the status of theological affirmations of God as Trinity, combined with a strong version of the vestiges hypothesis, is precisely what is required to avoid implying the existence of some external non-divine reality that is common to both God and the world. If, for example, distinctions within the world are taken to be merely 'analogous' (in the sense defined in §5.3.1) to the

distinction between the Father and the Son then the category of 'difference' may be regarded has having two independent origins, one in the being of God and one in the structures of the world. Difference would then appear to be a category that is external to God and the world and, to borrow Shults's words, 'comprehends them both'. In contrast, if the ground of the category of difference is the Son's otherness from the Father, and if every instance of distinction and otherness within the world is grounded in that difference as an 'imprint' of the work of the Word in creation, then there is no category of difference, of Secondness, *external to God's own being* against which the instances of difference in God and in creation can be compared. Similarly, if the ground of the category of mediation and generality is the Spirit's mediation between the Father and the Son, and if every manifestation of generality, purpose and intelligibility in the world is grounded in that intra-Trinitarian mediation as a 'vestige' of the work of the Spirit in creation, then there is no category of Thirdness common to God and to the world and prior to both. A 'strong' understanding of the idea of vestiges of the Trinity in creation – contrary to most current theological expectations and inclinations – actually acknowledges the absolute transcendence of God more adequately than apparently more cautious and humble appropriations of that "venerable" doctrine.[115]

* * *

In this chapter I have described the form of my argument using the metaphor of braiding together separate strands to make a rope or plait. Let us now, to stretch the metaphor a little further, survey the plaited strands with a view to checking that they have not become unnecessarily tangled, and to identify what are likely to be regarded as weaknesses and loose ends. In short, I have proposed that the themes of contingency, naturalism and continuity that arose from reflection on the science of evolutionary biology (Chapter 4) are reflections, respectively, of the underlying and enduring reality of Firstness, Secondness and Thirdness in cosmic evolution, as picked out by the concepts of tychastic, anancastic, and agapastic evolution in Peirce's evolutionary cosmology. Peirce's cosmology itself draws

---

[115] The adjective is Rahner's: *The Trinity*, 14.

together the themes of his overall philosophical endeavour, including his system of categories, his semiotics, and his theory of inquiry (Chapter 1). The triadic patterns that permeate these aspects of Peirce's philosophy were earlier developed into a 'semiotic model' of the Trinity (Chapter 2) and developed into an approach to the Incarnation and theological anthropology (Chapter 3). The burden of this chapter has been to present the hypothesis that the fundamental threefold patterns of the evolving cosmos may be understood, in a very strong sense, as vestiges of the Trinity in creation.

The first sections of this chapter (§5.1.1–§5.1.2) were devoted to outlining Peirce's evolutionary cosmology. Because this cosmology is informed by his threefold system of categories, and implicitly incorporates his semiotics and theory of inquiry, the inter-related threads of Peirce's philosophy that I began to lay out in Chapter 1 are implicitly brought forward into the structure of the present chapter. Together these various Peircean threads make up the philosophical 'strand' of the argument.

In the second set of sections I then undertook the task of braiding together the scientific, philosophical and theological strands of my argument. This involved, in effect, interpreting the themes of the 'scientific strand' (those of continuity, contingency and naturalism, carried forward from Chapter 4) by bringing them into relation with the philosophical strand. Specifically, the theme of evolutionary continuity was interpreted as a manifestation of the role of Thirdness in cosmic evolution, a role that underpins the emergence of generalities, purposes, signs and the interpretation of signs, and, ultimately, the existence of creatures capable of choosing their own (potentially 'agapastic') purposes (§5.2.1). Next, the theme of historical contingency was interpreted as a manifestation of the role of Firstness in the universe, a role that may be understood as the basis of every kind of ontological indeterminacy and openness to novelty that is familiar in ordinary experience and increasingly recognized in scientific accounts of the world (§5.2.2). In the last twist of the plait the 'theological strand' of the argument came to the fore. Here I interpreted the 'given-ness' of the created order, and the constraints experienced by creatures within the world, as reflections of the otherness of the world from God. According to the idea of the Trinitarian mediation of creation this givenness or otherness may be understood as a function of the creative work of the Word, the source of otherness and distinction within God's eternal being. Thus I interpreted the scientific

themes of ontological naturalism and the integrity of nature, corresponding to Peirce's understanding of the role of Secondness in evolution, in the light of the theological concepts of 'voluntarism' and creation *ex nihilo* (§5.2.3).

In the third set of sections in this chapter (§§5.3.1–5.3.3) the idea of the mediation of creation by God's two 'hands', the Word and Spirit, then provided a connection with the 'semiotic model' of the Trinity developed in Chapter 2.[116] My task in these sections was that of attempting to specify more clearly the role of the theological strand of the plait. I proposed the hypothesis that the similarities and parallels between Peircean descriptions of the world and Christian thinking about God as Trinity are a reflection of the structures and patterns of the created order bearing the intentionally imparted imprints of the continuous creative activity of the Word and Spirit. The world, in other words, contains 'vestiges' of the Trinity. Indeed, I hypothesize that the most fundamental patterns and structures of the cosmos, as picked out by Peirce's phenomenology and metaphysics, are sustained by God's continuous Trinitarian act of creation. Part of the justification for entertaining such an audacious hypothesis is that, paradoxically, the vestiges concept is most theologically fruitful, and hence plausible, when stated in its strongest form (a theme to which I shall return in §6.2). Only then, I suggest, is it able to give an account of the distinctive roles of the Son and Spirit in creation and to help to affirm the intrinsic connection between the 'immanent' Trinity and 'economic' Trinity. Furthermore, I have argued, only then is it possible truly to acknowledge the absolute otherness of God from creation, and to avoid the implication that some non-divine reality is the ground of the possibility of speaking about God.

The product of this braiding together of scientific, philosophical and theological strands will undoubtedly have given rise to serious doubts for some readers. One major concern is likely to be the way in which the project in effect represents an attempt to develop a whole new metaphysical framework for scientific and religious inquiry. Grand metaphysical schemes are commonly thought to have had their day. One of the questions that hangs over my whole

---

[116] It is important to recall that I use the term 'semiotic model' as a shorthand for 'an approach to Trinitarian theology drawing on Peirce's triadic semiotics and threefold system of metaphysical categories' (see the introductory paragraphs to Chapter 2).

scheme, therefore, is whether any such metaphysical proposal can be considered viable in the intellectual climate of late modernity?

A second potentially serious problem is that the semiotic model in general, and the hypothesis of vestiges of the Trinity in creation in particular, will be suspected of exemplifying a discredited form of natural theology. Does the semiotic model imply that knowledge of God can be derived deductively from scientific and philosophical inquiries about the world? If not, does the model suggest any other kind of reasoning that may lead from the triadic patterns of the world to an affirmation of the 'existence' of the God whom Christian tradition finds it necessary to speak of as Father, Son and Holy Spirit? And is the theology of nature proposed in this chapter intended to function merely as an intellectual construct or, alternatively, does the semiotic model invite any new experiential or devotional approaches to Christian engagement with the world?

The following chapter will be devoted to addressing these questions. I shall deal first with the question of the legitimacy of metaphysical schemes in our late-modern (or postmodern) age, and then discuss the relation of the semiotic model to the enterprise of 'natural theology'. Only after having defended the proposal against possible suspicions that it represents a discredited form of natural theology, or that it commits the kind of error that has given metaphysics a bad name, will I feel it safe to explore how, in a very qualified sense, there may be a devotional, even somewhat mystical path from the experience of the three categories in the course of everyday creaturely existence to an 'argument' for the reality of the triune creator.

METAPHYSICS AND THE ARCHITECTURE OF KNOWLEDGE

> One corollary…deserves to be inscribed upon every wall in the city of philosophy: Do not block the way of inquiry.
>
> C. S. Peirce, 1898[1]

In Chapter 5 I proposed a Trinitarian theology of nature according to which the triadic structures of semiosis and the underlying threefold pattern of categories may be understood as 'vestiges' of the Trinity in creation. That chapter was concerned primarily with ontological issues: I picked up some key themes (those of continuity, contingency, and naturalism) that had arisen from reflection on the processes of biological evolution, I explored those themes in the light of Peirce's speculative evolutionary cosmology, and I offered a theological interpretation of this philosophically mediated reading of the scientific account by relating it to the concept of the Trinitarian mediation of creation. As I noted at the end of Chapter 5, hanging over this speculative ontological scheme are crucial questions of epistemology and theological method. The purpose of this chapter is to address those questions.

I begin by considering the status of metaphysics and metaphysical schemes. My starting point is Peirce's dictum: "Do not block the way of inquiry" (EP 2.48). In §6.1.1 I suggest that the reason for metaphysics having fallen out of favour is that it is thought to block the way of inquiry, either by basing itself on *a priori* assumptions around which the rest of the totality of knowledge must be organized, or by adopting an authoritarianism whereby every area of inquiry is made subservient to an overarching metaphysical structure. In §6.1.2 I outline Peirce's approach to metaphysics and show how his understanding of 'the architecture of theories' avoids *a priori*-ism and authoritarianism. The structure of knowledge, according to this view, is hypothetical

---

[1] Charles S. Peirce, *The Essential Peirce: Selected Philosophical Writings, Volume 2 (1893–1913)*, edited by the Peirce Edition Project (Bloomington: Indiana University Press, 1998), 48. The punctuation of this epigraph follows CP 1.135. Peirce's dictum is often misquoted from this passage as: "Do not block the path of inquiry".

(and hence provisional) at every level of inquiry, including the level of metaphysics itself.

In §6.2 I consider the relation between my proposal and the enterprise of 'natural theology'. Natural theology, like metaphysics, is somewhat out of vogue at present. The main reason for this is the suspicion that natural theology seeks to derive knowledge of God from a source other than God's gracious self-revelation. Although I would prefer not to call my approach a 'natural theology', I acknowledge that some objections related to the issue of natural theology are likely to be levelled at my proposal. I therefore first explain in general terms why theological reflection on the created order need not be considered an attempt to bypass revelation. I then respond to some specific concerns to which my proposal may give rise: namely, that my non-foundationalist epistemological framework may undermine the possibility of affirming the reality of an ontologically transcendent creator; that the 'semiotic model' of the Trinity may imply the possibility of philosophically based knowledge of God that is independent of God's own self-revelation; and that the content of the theological understanding offered by the semiotic model may not do justice to the revelation of God in the person of Jesus to which Scripture attests.

Only after addressing these issues of philosophical and theological method do I dare turn to what amounts, in a very qualified sense, to a Trinitarian version of the cosmological 'proof' of the 'existence' (or, as Peirce would prefer, 'reality') of God. In §6.3.1 I outline the structure of what Peirce called the 'neglected argument' for the reality of God. In §6.3.2 I introduce Peirce's notion of 'musement', the practice of playful meditation on the categories as they present themselves to us in the everyday patterns of experience. I then take up Peirce's question about the origin of the three 'universes of experience' and present it, in the light of the 'semiotic model' of the Trinity, as a Trinitarian version of the classical cosmological argument for the existence of God. My aim in this section is emphatically not that of proposing a theistic argument that operates independently of the rest of Christian scripture and tradition. Rather, my intention is to suggest a kind of experiential engagement with the world that is consonant with, and potentially supportive of, the total enterprise of Christian theology.

6.1   *Metaphysics and the Architecture of Theories*

6.1.1   *Do Not Block the Way of Inquiry*

Alfred North Whitehead once remarked that Christianity "has always been a religion seeking a metaphysic".[2] For better or for worse, that is what I am offering in this book: a metaphysic within which Christian theology may be formulated in a way that is both internally coherent and capable of remaining in dialogue with contemporary science. New metaphysical schemes do not come along very often. Many will worry that my proposal is misguided, unnecessary, and out of step with the scepticism about metaphysics that tends to characterize late modernity.

Peirce was himself scathing about the state of metaphysics in his day, describing it as "a puny, rickety, and scrofulous science". Peirce's great motto was "do not block the way of inquiry" (EP 2.48). He believed the practitioners of metaphysics to be continually guilty of contravening this rule:

> It is only too plain that those who pretend to cultivate it [metaphysics] carry not the hearts of true men of science within their breast. Instead of striving with might and main to find out what errors they have fallen into, and exulting joyously at every such discovery, they are scared to look Truth in the face. (EP 2.375)

In this, Peirce identified theologians as the main culprits:

> In my opinion, the present infantile condition of philosophy…is due to the fact that during this century it has chiefly been pursued by men who have not been nurtured in dissecting-rooms and other laboratories, and who consequently have not been animated by the true scientific *Eros*; but who have on the contrary come from theological seminaries. (CP 1.620)

As it happens, these two quotations identify the two main objections that are nowadays commonly made against metaphysical schemes. First, metaphysics is assumed to be an exercise in *a priori*-ism: metaphysicians, it is alleged, decide in advance what the structure of the world must be and then organize all empirical knowledge around that *a priori* structure. Such a strategy blocks the way of inquiry by

---

[2] Alfred North Whitehead, *Religion in the Making* (1926; New York: World Publishing Co., 1960), 50.

protecting us from the need, as Peirce says in the first quotation above, "to look Truth in the face". Second, metaphysics is taken to necessitate what is often referred to as a 'totalizing' strategy, where the metaphysician's aim of achieving a comprehensive philosophical vision of reality is somehow conflated with the practices of political totalitarians.[3] Another way of putting this, in the terminology that Peirce would perhaps have used, is that such a strategy pursues inquiry by the method of 'authority' (cf. EP 1.117). The danger of the method of authority is that it blocks the way of inquiry by illegitimately imposing one person's (or group's) answers on someone else's field of inquiry. Those animated by "the true scientific Eros", as Peirce puts it in the second quotation above, learn that what they have been instructed to believe by the person in the office down the corridor might at any moment be overturned by something that happens in their own dissecting room or laboratory.

One reaction to the *a priori* and authoritarian temptations of metaphysics is to abandon it altogether. It is questionable, however, whether this is possible. As Peirce observed:

> Find a scientific man who proposes to get along without any metaphysics…and you have found one whose doctrines are thoroughly vitiated by the crude and uncriticized metaphysics with which they are packed. (CP 1.129)

Is there a cure, then, for the puny, rickety and scrofulous condition of metaphysics? Effective therapy requires an accurate diagnosis. Though I have earlier taken issue with his particular Peircean treatment of theology (§3.4.1), I find Robert Neville – especially in his book *The Highroad Around Modernism* – a reliable diagnostician in the area of metaphysical pathology.[4]

According to Neville, the distinguishing feature of 'modernity', the intellectual climate that emerged in the sixteenth and seventeenth centuries, has been its emphasis on learning from experience (51). 'Modernism', as distinct from modernity, may be understood as a movement arising in the nineteenth century comprised of "the family of cultural

---

[3] Vincent M. Colapietro, *Peirce's Approach to the Self: A Semiotic Perspective on Human Subjectivity* (New York: State University of New York Press, 1989), xvi.
[4] Robert Cummings Neville, *The Highroad around Modernism* (New York: State University of New York Press, 1992). All page references within the main text of this section are to this work.

responses to the panic of Europeans about the collapse of their religion and values in the face of modern science" (171). Whether or not modernity's Western philosophers became 'modernists' depended, Neville argues, on their response to Kant's transcendental turn (59). Kant had attempted to pursue the Cartesian project of seeking certainty as a foundation for scientific knowledge. The novelty of his approach was that, rather than asking how things can be known, Kant assumed that some things in mathematics and science *are* known and asked about the transcendental conditions for such knowing (10). These conditions then provide the *a priori* ground of knowledge (27). According to Neville, an implication of Kant's argument is that the sum total of knowledge can be doubted as a whole: if the *a priori* transcendental ground of knowing were false or untrustworthy then there could be no justification for believing any knowledge to be reliable (28). Neville argues that modernism's philosophical path took, as its starting point, a challenge to Kant's idea that knowledge can be affirmed or doubted as a whole (60). Instead, modernists sought to sustain Kant's project of preserving certainty "by retreating to something that they thought humbly could be made intelligible, significant, and valuable in itself" (60). Thus Neville summarizes modernism in general as,

> . . . the cultural style that seeks self-contained intelligibility, significance, and worth; in a diverse world this leads to professional specialization; its self-consciousness involves making a self-contained new start, significantly discontinuous with the past; and the methodological self-definition of a specialty allows, indeed encourages, a practitioner to declare those who follow other methods to fall outside the specialty. (59)

Specifically philosophical versions of modernism follow the same principles that inform modernist literature and art; namely, the requirements of a form of foundationalism 'local' to the specialty, and of a degree of 'self-containment' about the discipline in question. In the twentieth century the philosophical outworking of these principles of modernism may be seen in the various foundationalist projects centred around the study of symbolic logic (Russell), language (Wittgenstein), phenomenological description (Husserl), and the nature of subjectivity (Kierkegaard and existentialism) (93, also 10).

Modernism, according to Neville, is not without its virtues: it has created and discovered "many worlds of great self-contained intelligibility, significance, and worth" (64). The question arises, however, whether modernism's diverse self-contained domains can be integrated

within a larger whole. Neville suggests that honest attentiveness to history, "a simple piety to the past" (52), suggests otherwise:

> With regard to the coherence of system, at least in the historical sphere, we must abandon the dream of totality and necessity and acknowledge instead that, as far as we know, there are many pockets of order, sometimes interrelated, sometimes not, often irrelevant and indeterminate with respect to each other, passing with tangential connections, partially overlapping, sometimes in conflict but even then not in coherent agreement about what the fight is about. History has many streams, many traditions, rising and falling, entering and leaving prominence, going underground to emerge with new meanings in unexpected places, rarely with the coherence to totalize a period. (119)

Postmodernism (or 'ultramodernism') may be understood as a playing out of the ultimate implications of these fragmenting tendencies of modernism (9). Postmodernism proclaims the end of metaphysics, arguing that the entire tradition of Western thought is based on the idea of a Logos, a system of reason that holds together the diverse domains picked out by modernism (13). Jacques Derrida argues, for example, that since we now know that the distinction between signifier and signified cannot be maintained – that all signifieds are seen also to be signifiers – we must accept that "there is nothing outside the text".[5] It follows, according to postmodernism, that no overarching system of reason, no Logos, can allow the diverse domains of human inquiry to cohere. Systematic philosophy and metaphysics cannot, according to this view, avoid "the gross logocentric sin" of imperialistically imposing its categories on the multifarious pockets of order in the world (133).

Postmodernism's dismissal of metaphysics as totalizing may, however, be turned against itself. Arguably, it is only modernists and postmodernists who insist that metaphysics or systematic philosophy must always be 'totalistic', an insistence that is itself "a totalizing of the philosophical tradition" (120). There is, Neville suggests, an alternative approach to philosophical systematizing to that caricatured by the postmodern critique of 'logocentrism'. To take this "highroad around modernism" one must return to Kant and take a different path to the one followed by the modernists (59–60). The setting off point for this

---

5 Jacques Derrida, *Of Grammatology*, trans. G. C. Spivak (Baltimore: Johns Hopkins University Press, 1976), 158.

alternative path is to abandon the search for *a priori* foundations for knowledge, Kantian or otherwise. Neville puts it particularly clearly:

> Peirce's alternative [to Kant] was simple. The examination of any area of knowing such as science, common sense, ethics, or the like, must be undertaken from a level of generality that can define its basic elements such as world, evidence, or judgment. But that level itself is hypothetical and is to be in turn examined from whatever levels can objectify its basic suppositions. High level hypotheses are to be checked out by lower level, empirical, even sensible, hypotheses: the light is green, not red. Lower level hypotheses are to be interpreted by higher ones that articulate their conditions. *If philosophy were looked at as a system, it would be hypotheses from side to side, top to bottom, near and far*. (28, italics mine)

This view of philosophy as "speculative system" (93) gives rise to the possibility of a metaphysic that is tolerant rather than imperialistic; that seeks to provide "unified experiential access" to things rather than defining boundaries of inclusion and exclusion; that offers a "unified perspective" on otherwise incommensurable domains, "heuristically making them public to one another" (152). Systematic philosophy, according to Neville, "is the life of curiosity within civilization" (159).

Ironically, Neville argues, in spite of the general suspicion of grand metaphysical schemes within mainstream academic philosophy over the last century or so, the twentieth century may eventually be ranked alongside the seventeenth, the thirteenth and the fourth century B.C. for the daring of its metaphysics (71). Furthermore, according to Neville it is no accident that the metaphysical highroad around modernism has been a distinctively American highway (85, 169–176). In tracing this trajectory Neville explores particularly the importance of Whitehead's work (71ff.). For the methodological reasons outlined in my Introduction, however, I shall continue to follow in the footsteps of Peirce.

6.1.2   *Cenoscopy and Synthetic Philosophy*

Peirce distinguished two meanings of 'philosophy'. The first, which he followed Jeremy Bentham in naming 'cenoscopy' (the lookout upon the common), concerns our knowledge of the most general features of reality as they are accessible in familiar experience without the need for the specialized techniques of particular sciences. The second, 'ultimate' philosophy or 'synthetic' philosophy, "embraces all that truth which is derivable by collating the results of the different special sciences, but

which is too broad to be perfectly established by any one of them" (EP 2.372). Peirce observed that,

> Widely different as the two [philosophies] are, [they are] frequently confounded and intertangled; and when they are distinguished the question is often asked, 'Which of these is the true philosophy?', as if an appreciation of one necessarily involved a depreciation of the other. (EP 2.373)

If we follow Peirce's division of metaphysics into cenoscopy and synthetic philosophy we perhaps may say that the danger of *a priori*-ism attaches particularly to the former and totalization to the latter. Modernism in effect takes the aim of cenoscopy to be that of anchoring knowledge to a secure foundation. For Kant, the attempt to establish secure general conditions for knowledge applies globally; for modernists it is an exercise relative to a local domain of knowledge. Peirce's alternative path takes cenoscopy to be as hypothetical an enterprise as any of the special sciences. Cenoscopy is necessary as an attempt to discern the most general features of reality, but it is not a search for the *a priori* foundations of knowing.

The aim of synthetic philosophy, on the other hand, is to give a coherent overview of the whole. The dangers here are of authoritarianism and intellectual imperialism, of one domain of inquiry illegitimately claiming to have epistemological priority over another. Postmodernism rejects the possibility of any such ordering of the diverse domains of human inquiry as 'logocentric'. A 'speculative' (i.e., hypothetical) metaphysic, in contrast, allows the possibility that one domain may depend on another, but regards such relations as provisional and open to correction in the light of experience. The test of the validity of the system is not how well it matches some pre-established scheme, but how coherent and fruitful it proves to be in the encounter with reality (see §1.4.2). Picking up Neville's metaphor of metaphysics as a system of hypotheses from "side to side, top to bottom, near and far",[6] one might say that Peirce's vision of synthetic philosophy concerns the relations between the domains of inquiry within and across these dimensions. Cenoscopy, in contrast, is concerned with the question of whether this whole 'space' of inquiry is anchored anywhere, either as a whole (Kant) or by virtue of the possibility of anchoring any or all

---

[6] Neville, *Highroad around Modernism*, 28.

of the individual domains (modernism). Peirce's answer is that there is no such anchor, at least in the sense of an *a priori* foundation.

This view that the complementary enterprises of cenoscopy and synthetic philosophy should eschew any temptation to seek *a priori* fixed points is what I take to be meant by the term 'non-foundationalism'. As discussed in §1.4.2, this Peircean form of non-foundationalism is emphatically realist. It is unnecessary, according to Peirce, to suppose that the absence of *a priori* foundations prevents the community of inquirers from engaging with and describing the real world. The only necessary condition for the success of inquiry is that the inquirers are prepared to subject their hypotheses to testing in the laboratory of experience. In this context it may be objected that Peirce's definition of truth as the final opinion of the community inquirers appears, by implying the possibility of an ultimate authoritative version of the Truth, to be an example of the 'totalizing' tendencies of metaphysics. One response to such an objection is to question whether totalization is necessarily such a bad thing: it is surely legitimate to seek maximum coherence in our collective knowledge providing that no domains of inquiry are taken to be beyond testing and criticism. It is worth noting, moreover, that Peirce's early formulation of the idea of the 'final opinion' underwent important modification in his later thought (see §1.4.2) in a way that may reduce such suspicions of totalization. In his early formulations Peirce gave the impression that he had in mind a notion of a single, absolute Truth towards which all inquiry would converge, and indeed that the Truth is somehow dependent, by definition, upon the eventual actualization of such a convergence. In later formulations he reformulated the idea of convergence as a regulative ideal rather than as a definition of Truth, placing greater emphasis on the idea that the contingencies of inquiry may in some instances prevent the truth from becoming known.[7] Importantly, he also made clear that convergence is a matter of convergence of opinion on *particular* questions, rather than a single absolute answer to the question of the nature of reality.[8] Peirce's semiotics allows that, at a certain level of semiotic sophistication the questions that can be asked and the

---

[7] Christopher Hookway, "Truth, Reality, and Convergence," in *The Cambridge Companion to Peirce*, ed. Cheryl Misak (Cambridge: Cambridge University Press, 2004).

[8] Ibid., 130.

purposes thereby pursued, can become unlimited,[9] and this without retreating from realism to relativism.[10] As Short puts it, the continuity that underlies the evolution of human semiotic capacities from more primitive kinds of purposefulness, "reconciles the idea of a unitary real world with the fact of life's, and especially of human life's, irreducible richness, complete with all the tensions, conflicts, and unresolved riddles thereof".[11]

The difference between Peirce's non-foundational metaphysics and the postmodern caricature of metaphysics as totalization can be further illustrated by considering how Hegel's cosmology might be described in terms of Peirce's categories. Hegel's metaphysical scheme seeks totality.[12] In Peircean terms, Hegel's vision is of a movement of Thirdness (absolute Spirit) out of itself and into the contingent and particular world in which Firstness and Secondness have a place. This is followed by a process in which all contingency and particularity return to, and are subsumed by, absolute Spirit, thus making the absolute priority of Spirit (Reason) the basis of the total coherence of Hegel's cosmology. In Peirce's metaphysical scheme, in contrast, Firstness and Secondness have an enduring reality that is not ultimately subsumed by Thirdness. Built into a Peircean cosmology is an affirmation of the ontological irreducibility of contingency (Firstness) and alterity (Secondness), as well as intelligibility (Thirdness).[13] Those who regard metaphysics as necessarily 'totalizing' in effect assume that no metaphysical scheme could affirm the enduring reality of Firstness and Secondness. They also assume that their emphasis on the reality of contingency and alterity carries no metaphysical presuppositions of its own. Peirce's metaphysic, on the other hand, is able to account for the reality of otherness or 'alterity'[14] – notions that have an explicit and enduring place in his metaphysical cosmology – without denying the possibility, indeed the necessity, of metaphysics itself. In §5.2.3 I argued that this aspect of Peirce's metaphysics may be interpreted theologically in the context of my semiotic model of the Trinity, according to which the

---

[9] T. L. Short, *Peirce's Theory of Signs* (Cambridge: Cambridge University Press, 2007), 310.

[10] Ibid., Chapter 12.

[11] Ibid., 310.

[12] Cf. Neville, *Highroad around Modernism*, 111ff.

[13] See §5.1.

[14] See, for example, Emmanuel Levinas, *Alterity and Transcendence*, trans. Michael B. Smith (New York: Columbia University Press, 1999).

metaphysical reality of otherness is understood to be grounded in the intra-Trinitarian otherness of the Father from the Son.

Peirce began to set out his own 'synthetic philosophy' in his series of articles in *The Monist* in the early 1890s (see §5.1.2). The first of these articles, *The Architecture of Theories*, includes a metaphor which is instructive in the current context. Peirce imagines the task of (synthetic) philosophy as analogous to building, or re-building, a house:[15]

> That systems ought to be constructed architectonically has been preached since Kant, but I do not think the full import of the maxim has by any means been apprehended.... I purposely slur over many points, in order to make one special recommendation, namely, to make a systematic study of the conceptions out of which a philosophical theory may be built, in order to ascertain what place each conception may fitly occupy in such a theory, and to what uses it is adapted. (EP 1.286)

One approach, which Peirce identifies particularly with the instincts of English philosophers, is to attempt to build the whole house from a single idea:

> Just as if a man, being seized with the conviction that paper was a good material to make things of, were to go to work to build a *papier mâché* house, with roof of roofing-paper, foundations of pasteboard, windows of paraffined paper, chimneys, bathtubs, locks, etc., all of different forms of paper, his experiment would probably afford valuable lessons to builders, while it would certainly make a detestable house, so those one-idea'd philosophies are exceedingly interesting and instructive, and yet are quite unsound. (EP 1.286)[16]

All other systems of philosophy, according to Peirce, involve partial rebuilding of pre-existing structures, the main faults in such projects generally being that the revisions,

---

[15] We may be put in mind of Otto Neurath's metaphor, made famous by W. V. O. Quine: "Neurath has likened science to a boat which, if we are to rebuild it, we must re-build plank by plank while staying afloat in it. The philosopher and the scientist are in the same boat.... Our boat stays afloat because at each alteration we keep the bulk of it intact as a going concern". Willard Van Oram Quine, *Word and Object* (Cambridge: MIT Press, 1960), 3–4.

[16] Peirce mentions, among others, Hobbes and James Mill, but in our own time Peirce's metaphor of building a house from *papier mâché* seems an apt description of the approach of some of the so-called New Atheists. Compare, for example, Richard Dawkins's concept of 'Universal Darwinism'. Richard Dawkins, "Universal Darwinism," in *Evolution from Molecules to Men*, ed. D. S. Bendall (Cambridge: Cambridge University Press, 1983).

> …have generally not been sufficiently thoroughgoing, and second, that not sufficient pains has been taken to bring the additions into deep harmony with the really sound parts of the house. (EP 1.286)[17]

In this and the preceding section I have outlined a general philosophical approach to the status of metaphysics, arguing that Peirce's non-foundationalist form of 'synthetic philosophy' avoids the problems of *a priori*-ism and authoritarianism that have given metaphysical builders a bad name. In the following section I examine the 'architectural' structure of the scheme I been developing in this book with particular reference to the question of its relation to the idea of 'natural theology'. From the point of view of theological methodology, the question that must be considered is whether my appropriation of Peirce's philosophy in the service of Trinitarian theology gives rise to a harmonious and coherent structure or, alternatively, whether the philosophical elements of my scheme ultimately undermine the authentic theological architecture of Christianity.

6.2   *Natural Theology and Revelation*

Just as metaphysics has become unfashionable in philosophy, so the method of 'natural theology' has acquired a bad name among theologians. Karl Barth's uncompromising criticisms of natural theology have been particularly influential in this regard. Barth notoriously referred to natural theology as a "sorry hypothesis",[18] and held that the only possible source of Christian theology is the revelation of God through Christ: "Apart from and without Jesus Christ we can say nothing at all about God and man and their relationship one with another".[19] According to Barth, natural theology and revealed theology are mutually exclusive concepts:

> The logic of the matter demands that, even if we only lend our little finger to natural theology, there necessarily follows a denial of the rev-

---

[17]   An irony of Peirce's architectural metaphor for knowledge is that his own foray into actual architecture and building – his work on Arisbe, the farmhouse that he and Juliette bought in 1888 – was badly planned, poorly executed, and financially disastrous. Joseph Brent, *Charles Sanders Peirce: A Life.*, Revised and Enlarged Edition (Bloomington: Indiana University Press, 1998), 189–92.

[18]   Karl Barth, *Church Dogmatics*, vol. 4, part 3 (first half) (Edinburgh: T&T Clark, 1961), 117.

[19]   Karl Barth, *Church Dogmatics*, vol. 2, part 1. (Edinburgh: T&T Clark, 1957), 45.

elation of God in Jesus Christ. A natural theology that does not strive to be the only master is not a natural theology.[20]

At stake here, of course, is the issue of 'revelation'. Barth takes it as axiomatic that all knowledge of God must come from revelation and, further, that the pre-eminent source of revelation is the person of Jesus Christ, to whom Scripture bears witness.[21] Barth's strategy, in effect, is to emphasize that all knowledge of God must come from revelation and then to narrow the concept of revelation to include only Christ and Scripture. One must ask, however, whether this epistemological stance can be consistently maintained. At some point it will surely be necessary, even for the purpose of interpreting Scripture, to employ concepts and categories, ideas and hypotheses, that cannot be deduced exclusively from the scriptural witness to Christ. Barth's own identification of the "root of the doctrine of the Trinity" as the recognition that God must be understood as "Revealer, Revealed and Revealedness" is arguably a case in point.[22]

Recent discussions of the status of natural theology have recognized that the particular post-Enlightenment project of attempting to prove the existence and attributes of God from observations of the natural world is not the only form of natural theology. Other formulations are possible in which a much more reciprocal relation is envisaged between, on the one hand, conceptions of God based on phenomena in nature and, on the other, statements about nature based on conceptions of God.[23] Such reciprocity does not necessarily lead to a vicious circularity. As Moltmann puts it, the angels on Jacob's ladder were both ascending and descending.[24] Moreover, there is no reason to hold that these more nuanced kinds of natural theology are attempts to derive knowledge of God by a route that is not, ultimately, a manifestation of God's gracious self-revelation to the world. Rather than

---

[20] Ibid., 172.

[21] Karl Barth, *The Doctrine of the Word of God (Prolegomena to Church Dogmatics)*, trans. G. T. Thomson, vol. 1, part 1 (Edinburgh: T&T Clark, 1936), e.g., 350–51; Barth, *Church Dogmatics, vol. 2, part 1*, 45.

[22] Barth, *The Doctrine of the Word of God*, 344.

[23] David Fergusson, *Faith and Its Critics: A Conversation* (Oxford: Oxford University Press, 2009), Chapter 2. See also Fergusson's chapter, and a response by Sarah Coakley, in Andrew Robinson and Neil Spurway, eds., *Evolving Darwinism: From Natural Theology to a Theology of Nature* (Cambridge: Cambridge Scholars Press, Forthcoming).

[24] Jürgen Moltmann, *Experiences in Theology: Ways and Forms of Christian Theology* (Minneapolis: Fortress Press, 2000), 78. Moltmann goes as far as to assert that, "there is no Christian theology without natural theology" (ibid., 65).

saying that all knowledge of God must come from *revelation* (with the possibility that the legitimate sources of revelation will then be rather narrowly defined) it would perhaps be clearer to say that all knowledge of God must come from *God*. It is then easier to allow that there may be aspects of religious knowledge that are derived from, or enhanced by, reflections on aspects of the created order (other than the person of Jesus or the scriptural witness to him) but which may nevertheless be held to depend ultimately on God's graciousness towards the world.

David Cunningham has argued that a problem with Barth's position is that it underplays the role of the recipients of revelation and of the contexts that enable revelation to be received.[25] It is worth noting that the overall framework that I am proposing places great emphasis on the recipients of revelation. According to my semiotic approach to the Incarnation and to theological anthropology, the (human) recipients of revelation are understood to be constituted in just such a way as to be capable of interpreting the person of Jesus as a qualisign of the being of God (Chapter 3), that is, as "the image of the invisible God" (Col. 1:15), "the reflection of God's glory and the exact imprint of God's very being" (Heb. 1:3). According to the semiotic model, any of the words, ideas, and concepts that we use to speak of God arise within structures of inquiry (§1.4) that are shaped by the triadic patterns of semiosis (§1.3) and, ultimately, by the categories of Firstness, Secondness and Thirdness (§1.2). These threefold patterns within the created order are hypothesized to be 'vestiges' of – that is, the imprint of – God's ongoing work of sustaining the created order through the Son and the Spirit. There is no sense, then, in which I am claiming that knowledge of God can be obtained from the 'semiotic model' of the Trinity, or from Peircean philosophy in general, in a way that is not ultimately derived from the being of God and dependent on God's gracious patterning of the world in the likeness of his being. On the contrary, according to the semiotic model, the created structures of the world are – by God's grace – just such as to allow for the emergence of creatures capable of receiving God's ultimate revelation of God's-self, and to provide the context in which such revelation can occur.

It is not my intention to promote the semiotic model as a version of natural theology; indeed, because of the negative connotations that

---

[25] David S. Cunningham, *These Three Are One: The Practice of Trinitarian Theology* (Oxford: Blackwell, 1998), 101.

tend to be attached to that term I would prefer to refer to my reflections on the relation of the structures of the created order to the being of God as a 'theology of nature'. Nevertheless, the question of the relation of my approach to 'natural theology' will inevitably arise. The considerations outlined above may be sufficient to suggest that the framework outlined in this book is broadly consistent with an understanding of 'natural theology' that regards all knowledge of God as ultimately a gift from God and yet allows that such knowledge may be mediated in part through reflection on the created order in general. However, simply positioning my project in relation to current understandings of the status of natural theology will not be sufficient to address some of the specific concerns that will inevitably arise about the nature of the hypotheses I have been formulating. Broadly, these more specific potential objections can perhaps be summarized by the following three questions: 1) Does my non-foundationalist semiotic epistemological framework undermine the possibility of affirming the reality of an ontologically transcendent creator? 2) Does my 'semiotic model' of the Trinity, and my account of the concept of vestiges of the Trinity in creation, imply (in spite of the points made above) that there is a source of knowledge of God that is accessible independently of God's gracious self-revelation? 3) Does my general approach deliver a picture of God that is distorted or obscured compared to, say, the revelation of God in the person of Jesus through the witness of scripture? Let us consider each of these questions in turn.

1) Does my non-foundationalist semiotic epistemological framework undermine the possibility of affirming the reality of an ontologically transcendent creator?

The reason that non-foundationalist epistemologies may be suspected of undermining claims about the reality of an ontologically transcendent creator is that such frameworks are sometimes taken to imply a denial of *any* reality outside the world of our linguistic constructions.[26] As I argued in §1.4.2 in the context of Peirce's theory of inquiry, the idea that non-foundationalism (or fallibilism, as Peirce called it) implies

---

[26] See, for example, Don Cupitt, *Creation out of Nothing* (London: SCM, 1990); D. Z. Phillips, *Wittgenstein and Religion* (New York: St. Martin's Press, 1993); D. Z. Phillips, *Faith after Foundationalism: Plantinga-Rorty-Lindbeck-Berger. Critiques and Alternatives* (Boulder, Colorado: Westview Press, 1995).

a non-realist account of epistemology is mistaken. The basic reason for this is that a network of hypotheses, none of which can individually be taken as indubitable or axiomatic, can nevertheless be answerable to encounter with the 'real' world. The hypothesis that there is a reality that is as it is regardless of how you or I happen to think about it (§1.4.2) is supported by the fact that allowing our hypotheses to be modifiable in the light of experience seems to give rise to improvement in our ability to understand and interact with the world and predict the future course of events. Recognizing that Peirce's semiotics and theory of inquiry, though non-foundationalist through and through, is nevertheless consistent with a robust form of epistemological realism, removes the main ground for suspecting that non-foundationalism entails a denial of the reality of a transcendent creator.

Of course, for reasons touched on in §5.3.3, I do not wish to suggest that God should be thought of as one more entity within the world, something whose reality is tested in exactly the same way as, say, the reality of a table. Recognizing that non-foundationalism does not entail anti-realism undermines the idea that non-foundationalist theologies must deny the reality of God; it does not necessarily imply any particular stance on the nature of that reality. I would venture to go further, however, and suggest that epistemological non-foundationalism is actually more conducive to an affirmation of the reality of an ontologically transcendent creator than the foundationalist epistemological alternatives. The reason for this is indicated in the phrase that I introduced in §3.4.1: "the gift of abduction". The defining characteristic of the architecture of a non-foundationalist epistemology is that all knowledge is ultimately hypothetical. In the words of Neville already quoted, "If philosophy were looked at as a system, it would be hypotheses from side to side, top to bottom, near and far".[27] This is not to deny, of course, that within the framework of philosophical and theological hypotheses there are, as well as abductions, also deductions and inductions (see §1.4.1). But nowhere is the framework immovably secured by an epistemological anchor outside the framework. Knowledge is more closely analogous to naval architecture than to house-building: in Neurath's metaphor (note 15 above), the structures of knowledge are like a ship that must be continuously rebuilt while afloat.

---

[27] Neville, *Highroad around Modernism*, 28.

Therein lies, I suggest, the consonance between commitment to a radically non-foundationalist epistemology and an affirmation of the absolute qualitative difference and ontological reality of the creator of the world in which such structures of knowledge are possible. If knowledge of God were ultimately anchored by some foundational chain of deductions or inductions then God would be, so to speak, directly connected with the world. In contrast, a non-foundationalist understanding of knowledge privileges abductions as the most important source of new knowledge; that is, of knowledge that goes beyond that which is simply implicit in the facts and circumstances in question. This is not to say that our knowledge of God is nothing more than a collection of 'guesses'. Rather, it is to recognize that knowledge of a creator who utterly transcends the finite order of our being must be a form of abductive knowledge.[28] We may postulate, therefore, that the kind of world that would be created by a creator God who wished to reveal God's-self to creatures would be a world in which the structure of knowledge is fundamentally abductive. Epistemological non-foundationalism (of the Peircean variety) is, I suggest, the necessary condition of an affirmation by finite creatures of the reality of a transcendent self-revealing creator.

2) Does my 'semiotic model' of the Trinity and my account of the concept of vestiges of the Trinity in creation imply that there is a source of knowledge of God that is accessible independently of God's gracious self-revelation?

I have addressed this point in general terms above when I drew attention to the idea of a complementary and reciprocal relation between the aspects of revelation that are given in Scripture and those that are accessed by reflection on the 'natural' world. Nevertheless, the suspicion that my scheme implies that knowledge of God may be obtained independently of God's own self-revelation may be pressed more specifically. One way of doing so would be to object that, in spite of my stated commitment to epistemological non-foundationalism, the structure of my argument in fact takes Peircean philosophy, particularly

---

[28] I do not think that this claim implies any limitation of God's sovereignty: God *could* have chosen to give existence to a 'world' in which God would be known by means of deductions and inductions. The problem is that such a world would not really be a 'creation', since it would be, in effect, an extension of the divine.

the reality of his categories, as axiomatic *a priori* foundations for the whole project.

It may be helpful to respond to this objection with reference to Imre Lakatos's idea that scientific research programmes are constituted by sets of 'core' and 'auxiliary' hypotheses, an idea that has been applied to the structure of theological inquiry by Nancey Murphy.[29] As J. Wentzel van Huyssteen points out, a key question concerns the sense in which the core hypotheses of a research tradition are taken to be 'sacrosanct'.[30] Is it possible for a tradition to retain its identity even if it permits some degree of modification of its core hypotheses over time? In terms of the non-foundationalist approach to the 'architecture of theories' outlined above (§6.1.2) I suggest that this question itself has two related parts. First, how much modification of the core hypotheses could be tolerated before the tradition would have to be said to have repudiated its identity? If the core hypotheses are understood to be *a priori* epistemological foundations then it would seem that any modification of the core hypotheses would threaten the research programme as a whole. On the other hand, if the core hypotheses are themselves taken to be hypothetical (as they would be in the non-foundationalist 'architecture' with which I am working) then the related structure of auxiliary hypotheses need not collapse in the event of some shifting of the core hypotheses. According to that view, the distinction between core and auxiliary hypotheses would be considered a relative one: core hypotheses are simply more stable elements of the programme than auxiliary hypotheses. This position is perhaps closer to Larry Laudan's concept of 'research traditions' than to Lakatos's research programmes though, as noted above (§6.1.2) and discussed in Chapter 1 (§1.4.2), I do not consider the non-foundationalist character of such a position to be (as Laudan supposes) incompatible with epistemological realism.[31]

---

[29] Imre Lakatos, "Falsification and the Methodology of Scientific Research Programmes," in *Criticism and the Growth of Knowledge: Proceedings of the International Colloquium in the Philosophy of Science, London, 1965, Volume 4*, ed. I. Lakatos and A. Musgrave (Cambridge: Cambridge University Press, 1970); Nancey Murphy, *Theology in an Age of Scientific Reasoning* (New York: Cornell Universty Press, 1990).

[30] J. Wentzel van Huyssteen, *Essays in Postfoundationalist Theology* (Grand Rapids: William B. Eerdmans, 1997), 32. Van Huyssteen takes foundationalism and non-foundationalism to be two extremes, with postfoundationalism representing an alternative to both. I take van Huyssteen's concept of postfoundationalism to correspond broadly to the Peircean variety of non-foundationalism.

[31] Larry Laudan, *Progress and Its Problems: Toward a Theory of Scientific Growth* (Berkeley: University of California Press, 1977).

The second aspect of the question about the status of the core hypotheses which then arises is why a tradition treats some hypotheses as more 'stable' than others. One reason for doing so may be that the weight of evidence is held to be so secure that the core hypothesis in question is highly unlikely to require substantial future modification. An example is the way in which the hypothesis that living organisms are related by descent with modification (§4.1.1) is regarded by evolutionary biologists as highly unlikely to be falsified by new empirical evidence. This differs from the situation in which a research tradition makes a decision to provisionally accept the core hypothesis in question in order to explore the consequences of so doing. It was presumably with something like this latter scenario in mind that Lakatos advised that "one must treat budding programmes leniently".[32] The proposal for a research programme that is constituted by the web of hypotheses explored in this book fits most closely with the latter account. At the heart of my proposal is a decision to take Peirce's phenomenological analysis of the categories, and his related triadic semiotics, as core hypotheses. However, as I emphasized in §1.2.2, Peirce's system of categories may itself be understood as an entirely hypothetical analysis of reality. As Short puts it:

> ... Peirce's phaneroscopic [phenomenological] method needs no a priori justification but will be justified, if at all, by its results.... its three categories illuminate every issue. The burden of proof therefore lies on those who think the categories incomplete. Let them cite an example of irreducible 4thness. Or let them cite a philosophical problem whose solution requires 4thness.[33]

If examples of 'Fourthness' can be shown to be irreducible and indispensable for the description of reality then several of the core hypotheses of my proposal would have to be modified to a degree that the research programme centred around my 'semiotic model of the Trinity' would not survive in a recognizable form.

In principle, therefore, the core hypotheses of my proposal are subject to testing and possible refutation. The irreducibility and comprehensiveness of the categories could be investigated in the fields of mathematics and logic (such investigations being beyond my own

---

[32] Lakatos, *Falsification and the Methodology of Scientific Research Programmes*, 179.
[33] Short, *Peirce's Theory of Signs*, 74.

competence) or by phenomenological analysis of everyday experience. Having looked at the world through Peircean lenses over a period of years I am inclined to agree with Short's conviction that the categories "illuminate every issue". However, it has not been part of the aim of this book directly to argue for this claim. From the point of view of most readers of this book (i.e., those not already steeped in and persuaded of the power of Peirce's analysis) my decision to take Peirce's categories as core hypotheses in the programme must be regarded as a provisional commitment made with a view to exploring whether such an approach is generative. Crucially, however, making the categories a 'fixed point' in the architecture of my scheme is entirely consistent with an overall view of the structure of knowledge as hypothetical from top to bottom, side to side, near and far. In other words, the pivotal role of Peirce's categories in my scheme does not conflict with the theological account of non-foundationalism argued for under question (1) above. Philosophical analysis of the categories is not an *a priori* source of knowledge (philosophical or theological) that is accessible outside and independent of God's gracious choice to create a world so structured as to allow God's self-revelation to creatures.

3) Does my general approach deliver a picture of God that is distorted or obscured compared to, say, the revelation of God in the person of Jesus through the witness of scripture?

A third main area of concern that will inevitably arise about my proposal is whether it seeks to replace the revelation of God in the person of Jesus, to which Scripture attests, with a philosophical account whose content owes more to speculative metaphysics than to revealed theology. The difference between this concern and that discussed under question (2) above is that the previous question concerned the *basis* of knowledge of God (whether I am claiming a source of theological knowledge that lies outside God's gracious self-revelation) whereas the present question is concerned with the *content* of that knowledge. Of course these two concerns are closely related, but they are not identical. One way of pressing the objection that I have in mind here is to ask whether the framework I have proposed amounts to a claim that the categories *are* God? In other words, am I suggesting that God *is* Firstness, Secondness and Thirdness?

In order to answer this I must clarify what role I take Trinitarian theology to have in relation to reflection on the person of Jesus of

Nazareth. Christian theology begins with reflection on the significance of Jesus' life, death, and resurrection.[34] From such reflection the hypothesis arises (to cut a long story short) that Jesus is the "image of the invisible God" (Col. 1:15), the "exact imprint of God's very being" (Heb. 1:3). Trinitarian theology then emerges as the product of further reflection on what must be said of God, and God's relation to the world, for such an understanding of the relation between Jesus and God to be true. The doctrine of the Trinity is therefore, I suggest, a 'second-order' expression of what must be the case in order to make it possible to assert the 'first-order' Christian claims about the significance of Jesus.[35] In Kantian terms, Trinitarian theology is a statement of the transcendental conditions for Christology. Crucially, in the non-foundationalist Peircean epistemological architecture with which I am working, both of these 'levels' of reflection must be considered to be hypothetical. That is to say, both the first-order confession that Jesus reveals the Father and the second-order affirmation that God is eternally triune are hypotheses. Neither statement is epistemologically foundational in the sense of standing as an *a priori* ground of knowledge that can be entirely abstracted from wider contexts and networks of hypotheses.[36]

It is, nevertheless, true to say that the hypothesis that Jesus reveals the Father is sufficiently central to Christian belief that were it shown to be false or incoherent then the Christian tradition would cease to be recognizable as such. Similarly, denial of the doctrine of the Trinity has generally been held to mark a boundary between orthodox and heretical Christian belief, reflecting, I suggest, the fact that belief in God as Trinity is recognized as the transcendental condition for

---

[34] Even the word 'begins' must be treated with some qualification in the light of a thoroughly non-foundationalist epistemological approach. Such a qualification is not a denial of the centrality of Scripture to Christian theology. It is implicit in the simple recognition, for example, that the New Testament is related to the Hebrew Scriptures.

[35] As Ralph Del Colle puts it, "Trinitarian doctrine is not the consequence of combining several Christian affirmations so much as the prerequisite for any Christian affirmation. Ralph Del Colle, "The Triune God," in *The Cambridge Companion to Christian Doctrine*, ed. Colin E. Gunton (Cambridge: Cambridge University Press, 1997), 136.

[36] For the reasons outlined under questions (1) and (2), locating these claims within wider contexts of human inquiry and history does not amount either to a denial of the reality and transcendence of God the creator and revealer or a postulation of some basis for theological knowledge independent of God.

affirming that, in the person of Jesus, the invisible God has been fully revealed.

In the light of these remarks my answer to the question of whether I wish to claim that God *is* the categories of Firstness, Secondness and Thirdness is both "yes" and "no". The answer is yes in the sense that I take the 'semiotic model' of the Trinity – that is, the hypothesis that Peirce's categories and triadic system of semiotics are a real likeness of the being of God – to be consistent with, and a contribution to, the idea that affirming the tri-unity of God is the transcendental condition for belief in Jesus as the full revelation of God the Father. God's eternal being consists in the uncreated subsistent relations that, in the semiotic model, we give the names Firstness, Secondness and Thirdness (cf. §2.4.2). The answer is no, on the other hand, in the sense that the hypothesis of the Trinity (whether in Christian tradition in general or its specific formulation in my semiotic model) does not amount to 'first-order' knowledge about God. Rather, it is a necessary 'second-order' hypothesis, required as the transcendental condition of affirming the content of 'first order' Christian reflection. If asked, "what is God like?," the Christian answer is to point first to the person of Jesus as the image of the invisible God, the exact imprint of God's very being; in terms of my Peircean approach, an embodied qualisign of God the Father (§3.1). Only secondarily does it make sense to say that a condition for making such an affirmation is an understanding of God as Trinity.[37] Philosophical reflection can help to formulate, clarify and explore this second-order transcendental hypothesis (as I have attempted to do in this book), but it cannot deliver knowledge of God that by-passes the revelation of the Father in the person of Jesus of Nazareth.

Another way of putting this is to say that the quality actually revealed in the life, death, and resurrection of Jesus could not have been deduced from philosophical starting points. Even if it were possible to derive, from philosophical considerations, an account of the kind of structure of revelation that would be required in order for the transcendent God to reveal God's-self to finite creatures, it would not

---

[37] Of course, those who wish to treat, say, the formulations of the ecumenical Councils as foundational axioms of Christian belief will not find my approach congenial. They should not, however, make the mistake of thinking that understanding the doctrine of the Trinity as a 'second-order' hypothesis implies any less realist an understanding of the content of the doctrine than their own.

be possible to predict the *content* of such revelation on philosophical grounds alone. God the Father is revealed in the quality of the person and life of Jesus, a quality that can only be fully described by pointing, via Scripture, to the actual embodiment of that quality in the world. Nevertheless, once the hypothesis arises that the total quality of Jesus' life is – in the context of the relevant social, historical, and religious background – the image of the invisible God, then philosophical reflection on the world can clarify and support that hypothesis by offering resources for the formulation and testing of both the first order and second order aspects of the claim. In short, the first order and second order levels of Christian reflection are not in competition with one another. The semiotic model is not an attempt to replace the content of the revelation of God in the person of Jesus with a philosophical scheme based on Peirce's categories, any more than Trinitarian theology is necessarily in conflict with the Gospels.

These responses to three broad questions that may be asked about the relation between my 'semiotic model' and issues of theological method bring us back to a point that I mentioned briefly in the previous chapter (§5.3.3). There I suggested that, paradoxically, the idea of 'vestiges' of the Trinity in creation is theologically most coherent when understood in its stronger forms. I argued there that if, for example, distinctions within the world are taken to be merely 'analogous' to the distinction between the Father and the Son then the category of 'difference' may be regarded as having two independent origins, one in the being of God and one in the patterns of the world. In that case 'difference' would appear to be a category that is external to both God and the world, thus restricting the sovereignty of God by implying that God's being is constrained by some non-divine category. The same argument could be repeated with respect to the categories of quality (Firstness) and mediation (Thirdness). In light of the questions explored above we are now in a position to extend the same argument beyond consideration of the categories individually to the origin of the epistemological structures of the world as a whole.

The argument would run as follows:

The structures of creaturely knowing have a triadic pattern which is described by Peirce's categories and which permeates through every aspect of his semiotics and theory of inquiry (Chapter 1). As I argued in my sketch of a semiotic approach to scientific and theological anthropology (Chapter 3, and Question 1 above), the triadic structures that underpin the possibility of everyday (including scientific) creaturely

knowing are the same structures that make it possible for the God who is infinitely qualitatively different from creation to be known by (revealed to) creatures. But in Chapter 2 I had already outlined the apparently non-trivial similarities between Peirce's threefold system of categories and triadic semiotics and traditional ways of formulating the second-order Christian hypothesis that God is Trinity. Of course, when I use the words 'threefold' and 'triadic' here I am referring specifically to the particular threefoldness of Peirce's categories. The mere fact of triadicity would not be of great consequence in itself; it is the multiple correspondences and apparently non-trivial parallels between Peirce's categories and Trinitarian thought outlined in Chapter 2 that are of interest. In the interests of verbal clarity in the next few sentences let us refer to the specific, comprehensive, and irreducible '*perichoresis*' of the categories of Firstness, Secondness and Thirdness and their parallels in Trinitarian thought as 'threeness'.

The question of the nature of the relation between the 'threeness' of God and the 'threeness' of the world may then be posed as follows. If the patterns of 'threeness' in the world are real 'likenesses' (in the sense defined in §5.3.1) of the 'threeness' of the Trinity then the structures of creaturely knowing have their origin and ground in the being of God. If that is so then it is possible to affirm that all creaturely knowledge, including the kind of knowledge of God that God has graciously revealed to us, has its ultimate origin in God's own self. On the other hand, if the 'threeness' of the world is not a real likeness of the 'threeness' of God, but merely a humanly constructed analogy, then the 'threeness' of creaturely epistemological structures and the 'threeness' that second-order human theological reflection hypothesizes of the being of God must have their common origin in some independent ground of 'threeness'. This conclusion could be rejected if it could be shown that the parallels between the 'threeness' of the world and the 'threeness' of Trinitarian thought that I have been exploring in this book are, contrary to my contention, superficial or trivial. I am open to such an argument, though I do not think it would be an easy one to sustain. Alternatively, the conclusion could be rejected by asserting that Christian thinking about God as Trinity *is* merely analogical (in the sense defined in §5.3.1), deriving (merely) from human experience of the 'threeness' of the world. But this would undermine the function of Trinitarian thinking as a second-order hypothesis necessary for an affirmation of the first-order claim that Jesus fully reveals the Father. In that case it would be doubtful whether speaking of God as Trinity

would be theologically necessary or meaningful. The more coherent and plausible position, then, is that the 'threeness' of the world is, indeed, a 'vestige of the Trinity in creation'; the ontological ground of the epistemological possibility of creaturely knowledge of God.

6.3   A 'Cosmological Argument' From the Universes of Experience

6.3.1   Peirce's 'Neglected Argument'

If the account of the theological role of reflection on the created order that I have sketched above counts as a 'natural theology' then it is a very different project to that of the post-Enlightenment enterprise of attempting to prove the existence of God without reference to so-called 'revealed theology'. Only having distanced myself from such an enterprise do I now dare to consider whether reflection on the categories might offer, in a very qualified sense, an 'argument' for the reality of the triune Creator. To that end let us turn to consider Peirce's 1908 paper '*A Neglected Argument for the Reality of God*' (EP 2.434–450).

   It is helpful to begin at the end of Peirce's paper, with his addendum, or Additament as he called it. At the request of the editor of *The Hibbert Journal*, Peirce had produced two versions of this addendum by way of summary of the preceding argument, in fact hoping that neither version would be published.[38] Taken together the two versions of the Additament make clear that Peirce thought of the Neglected Argument as consisting of three nested arguments.[39] The first part of the argument, which he calls the 'humble argument', derives from the sheer attractiveness of the hypothesis of the reality of God. Although this layer of the nest of arguments may appear somewhat trivial, it will prove to be significant for my formulation of a kind of 'cosmological argument' in the following section. Peirce considered the humble argument to be an argument "open to every honest man, which I surmise to have made more worshippers of God than any other" (EP 2.446). He envisaged this stage of the argument to be essentially non-theoretical and uncritical:

---

[38] EP 2.551, note 14.
[39] Near the beginning of the paper Peirce makes a distinction between 'arguments' and 'argumentations', the former covering reasoning in general and the latter referring to the particular case of reasoning starting from identifiable premises (EP 2.435). I shall not introduce that distinction into the present discussion.

> In the mind of a metaphysician it [the humble argument] will have a metaphysical tinge; but that seems to me rather to detract from its force than to add anything to it. It is just as good an argument, if not better, in the form it takes in the mind of the clodhopper. (EP 2.448)

The second stage of the argument is what Peirce specifically labelled the 'Neglected Argument', though he admitted that at times he also used this term to refer to the complete nest of three arguments. The Neglected Argument proper is so-called because Peirce held that theologians ought to have paid it more attention (EP 2.448). The neglected argument would, if theologians were to develop it in the way advocated by Peirce, amount to a conclusion drawn from reflection on the force of the humble argument:

> …the humble argument is the natural fruit of free meditation, since every heart will be ravished by the beauty and adorability of the Idea [of God], when it is so pursued. Were theologians able to perceive the force of this argument, they would make it such a presentation of universal human nature as to show that a latent tendency toward belief in God is a fundamental ingredient of the soul. (EP 2.446)

The third stage of the argument connects the Neglected Argument with Peirce's pragmaticism (EP 2.449). This outer ring in the nest of arguments consists in reflection on the place of the humble argument as part of a process of scientific reasoning, where 'reasoning' is to be understood in the broad sense implied by Peirce's theory of inquiry (§1.4). The humble argument is an abduction, though one with the peculiar character, according to Peirce, of being so plausible as to be almost irresistible (EP 2.441, 2.447). From this initial abduction, or hypothesis, we would expect to be able to deduce other things that would follow were the hypothesis true. Peirce finds that when applied to the hypothesis of God this deductive phase of the scientific process is again peculiar, since in this instance the hypothesis can only be apprehended "very obscurely" (EP 2.447). Here Peirce exhibits a notable apophaticism:

> How, for example, can we ever be able to predict what the conduct would be even of any omniscient being governing no more than one poor solar system for only a million years or so? How much less if, being also omnipotent, he be thereby freed from all experience, all desire, all intention! (EP 2.447)

Peirce goes on to suggest that, "The effects of the second peculiarity of the hypothesis are counteracted by a third, which consists in its com-

manding influence over the whole conduct of life of its believers" (EP 2.447). As I outlined in §1.4.2, according to Peirce's pragmatic maxim the meaning of a concept is given by the habits to which it gives rise. Furthermore, the ultimate logical interpretant of a sign is constituted by the habits that would adequately interpret it for a given purpose (§1.3.1). The concept to which the humble argument gives rise in the form of an abduction is that of God. The consequences of the reality of God, should the hypothesis be true, are peculiarly difficult to deduce, and yet the testing of the hypothesis of God in the form of practical habits of conduct leads to "a living, practical belief, logically justified in crossing the Rubicon with all the freightage of eternity" (EP 2.449). In other words, Peirce takes the results of practical testing of the hypothesis of God to be the ultimate measure of its plausibility, and the justification for committing oneself to its consequences. He concludes the body of the article:

> In short, he [a trained man of science who, in the modern spirit, has added to his specialty an exact theoretical and practical study of reasoning] will say that the N.A. [Neglected Argument] is the First Stage of a scientific inquiry, resulting in a hypothesis of the very highest Plausibility, whose ultimate test must lie in its value in the self-controlled growth of man's conduct of life. (EP 2.446, first insertion in brackets from 2.445).

The Neglected Argument, then, consists of three nested arguments, the inner argument being an uncritical attraction to the hypothesis of God, the middle argument comprising reflection on the alleged universality of such an attraction, and the outer argument consisting in recognition of the practical effects of acceptance of the humble argument as a pragmatic measure of its value. In the context of the semiotic framework, however, the most interesting aspect of Peirce's exposition of the Neglected Argument is the account he gives of the formulation of the inner core of the nest, the humble argument. Specifically, I suggest that, in the context of my Peircean approach to Trinitarian theology, Peirce's humble argument might offer a kind of cosmological argument with a Trinitarian shape.

6.3.2 *A Petite Bouchée with the Categories: Intimations of the Trinity*

Let us turn, then, to the beginning of Peirce's 1908 paper. There Peirce briefly defines some terms – God, Idea, Real, Experience, Argument –

and introduces the three categories, calling them "the three Universes of experience familiar to us all" (EP 2.435). He then describes a way of opening oneself to these Universes, a practice that he refers to as 'musement':

> There is a certain agreeable occupation of mind which, from its having no distinct name, I infer is not as commonly practiced as it deserves to be; for, indulged in moderately, – say through some five to six percent of one's waking time, perhaps during a stroll, – is refreshing enough to more than repay the expenditure. Because it involves no purpose save for that of casting aside all serious purpose, I have sometimes been half-inclined to call it *reverie*, with some qualification; but for a state of mind so antipodal to vacancy and dreaminess, such a designation would be too excruciating a misfit. In fact it is Pure Play. Now, Play, we all know, is a lively exercise of one's powers. Pure Play has no rules, except this very law of liberty. It bloweth where it listeth [John 3:8]. It has no purpose, unless recreation. The particular occupation I mean, – a petite bouchée [little kiss] with the Universes, – may take either the form of esthetic contemplation, or that of distant castle-building…, or that of considering some wonder in one of the Universes or some connection between two of the three, with speculation concerning its cause. It is this last kind, – I will call it "Musement" on the whole, – that I particularly recommend, because it will in time flower into the N.A. [Neglected Argument]. (EP 2.436)

Peirce offers the following advice for anyone who wishes to make a trial of Musement:

> The dawn and the gloaming most invite one to Musement; but I have found no watch of the nychthemeron that has not its own advantages for the pursuit. It begins passively enough with drinking in the impression of some nook in one of the three Universes. But impression soon passes into attentive observation, observation into musing, musing into a lively give-and-take of communion between self and self. If one's observations and reflections are allowed to specialize themselves too much, the Play will be converted into scientific study; and that cannot be pursued in odd half-hours…. So, continuing the counsels that had been asked of me, I should say, "Enter your skiff of Musement, push off into the lake of thought, and leave the breath of heaven to swell your sail. With your eyes open, awake to what is about you or within you, and open conversation with yourself; for such is all meditation". (EP 2.436–437)

Peirce gives a few examples of the kinds of course that Musement might take and then, in a passage that is eloquently dismissive of materialistic reductionism, returns to the overall line of argument:

> This is a specimen of certain lines of reflection which will inevitably suggest the hypothesis of God's Reality. It is not that such phenomena might not be capable of being accounted for, in one sense, by the action of chance with the smallest conceivable dose of a higher element; for if by God is meant the *Ens necessarium* [necessary Being], that very hypothesis requires that such should be the case. But the point is that that sort of explanation leaves a mental explanation just as needful as before. Tell me, upon sufficient authority, that all cerebration depends on movements of neurites that strictly obey certain physical laws, and thus all expressions of thought, both external and internal, receive a physical explanation, and I shall be ready to believe you. But if you go on to say that this explodes the theory that my neighbour and myself are governed by reason, and are thinking beings, I must frankly say that it will not give me a high opinion of your intelligence.

It is noteworthy that Peirce acknowledges in this passage that the world might be (more or less) self-explanatory and that this is to be expected if God is the *Ens necessarium*. His scorn is not directed at scientific naturalism but at materialistic reductionism. He continues:

> But however that may be, in the Pure Play of Musement the idea of God's Reality will be sure sooner or later to be found an attractive fancy, which the Muser will develop in various ways. The more he ponders it, the more it will find response in every part of his mind, for its beauty, for its supplying an ideal of life, and for its thoroughly satisfactory explanation of his whole threefold environment. (EP 2.439)

It is clear here that Peirce is not attempting to construct any deductive argument from the existence or structure of the world to the reality of God. Rather, as the final sentence of this passage emphasizes, it is the overall coherence of the hypothesis of God – aesthetically, ethically and cognitively – that makes it compelling. We may also note that these three aspects of the coherence of the hypothesis – its beauty, its supplying a guide for life, and its explanatory power – are themselves manifestations of Firstness, Secondness, and Thirdness respectively, reflecting the triad of aesthetics, ethics and logic that together constitute the normative sciences (§1.2.2). I noted above that one aspect of Peirce's nest of arguments is the practical testing of the hypothesis of God as the ultimate justification for committing oneself to its consequences ("crossing the Rubicon with all the freightage of eternity", EP 2.449). The breadth of Peirce's account of the nature of inquiry (§1.4) is such that this practical testing may be taken to mean not only the ethical outworking of theistic belief but also, as is evident in the passage just quoted, its aesthetic attractiveness and its power as

an explanation of one's "whole threefold environment". In this latter respect I wish to go beyond Peirce, beyond at least what he explicitly says in the *Neglected Argument*, by suggesting a Trinitarian interpretation of 'musement' on the categories.

It is notable that, although the Neglected Argument draws on reflection on the threefold structure of the world and the possible relation of the three categories to God, the doctrine of the Trinity is not mentioned. Perhaps this fact can be attributed to Peirce's aversion to what he regarded as the rigidity and authoritarianism of theological dogma. At the beginning of the paper Peirce declares that God, the *Ens necessarium*, is "in my belief Really creator of all three Universes of experience" (EP 2.434). The Neglected Argument, he later concludes, is "the natural precipitate of meditation upon the origin of the Three Universes" (EP 2.446) and describes the humble argument as "the first stage of a scientific inquiry into the origin of the Three Universes" (EP 2.449). And yet, for all his emphasis in the *Neglected Argument* on the role of musement on the three categories and their origin, it is not entirely clear why Peirce's neglected argument should necessarily start with reflection on the categories as opposed to any other way of experiencing wonder at the world of experience. The repeated references to the question of the origin of the 'Three Universes' suggests that he is using the phrase as more than a circumlocution for 'everything that is'. It is therefore tempting to read an incipiently Trinitarian shape into Peirce's Neglected Argument. However, even if one were to think that Peirce was thinking along Trinitarian lines while being reluctant to express the argument in such terms it is clear that his approach would imply a very different understanding of the Trinity to that with which I have been working. For example, he appears to allow that one of the categories might exist independently of God the creator, which would imply that he would reject a standard reading of the doctrine of creation *ex-nihilo*. Referring to the practice of musement he writes:

> It is that course of meditation upon the three Universes which gives birth to the hypothesis and ultimately to the belief that they, *or at any rate two of the three*, have a creator independent of them, that I have throughout the course of this article called the N.A. [Neglected Argument]. (EP 2.448, italics mine)[40]

---

[40] Peirce does not say which of the categories might be independent of God. Corrington's discussion of Peirce's conception of God would suggest that Peirce may have regarded Firstness, in its most primordial form, as prior to God's being.

I wish to suggest that Peirce's idea of the role of 'musement' in his nest of theistic arguments may be reframed in an explicitly Trinitarian manner, offering a form of the traditional 'cosmological argument' that coheres with the theology of nature developed in Chapter 5, and which does not conflict with the principles of theological methodology explored above (§6.2).

Let us start by following Peirce's method of focussing on our phenomenological experience of one of the categories, or of the relation between them. Like Peirce, I shall not stipulate exactly how this should be undertaken: it is of the nature of the exercise that the encounter with the categories should be first-hand. The reader who has progressed this far with the argument of this book will have gained, I hope, some notion of how the totality of experience may be peeled away into its constituent elements: potentiality-actuality-generality; quality-difference-meaning; Firstness-Secondness-Thirdness (§1.2). We may also recall Peirce's insistence that the exercise requires no special intellectual or spiritual capacities beyond those possessed by most human beings: all of us "clodhoppers" are invited to participate in musement in the spare moments – or "odd half hours" – available to us. In the course of each such "petite bouchée" with the categories we may find ourselves disposed to speculate on their origin. Here, drawing on my semiotic approach to Trinitarian theology, we may reach beyond Peirce, or at least beyond what he explicitly articulated. Thus we may find it attractive and coherent to suppose, not merely that the hypothesis of the reality of God might provide a satisfying explanation of the threefold ordering of the world and of experience, but further, that this triadic patterning of the world has its origin in the triune reality of the Creator. When we open ourselves to the experience of Firstness, the experience of sheer quality or potentiality, we may hypothesize that such experience depends on the reality of the eternal, necessary and uncreated ground of Firstness, known in Christian tradition as God the Father. When we subject ourselves to the experience of Secondness, the experience of otherness and difference, we may hypothesize that such experience depends on the reality of the eternal, necessary, and uncreated ground of Secondness, known in Christian tradition as the Son or Word of God. And when we engage

---

Robert S. Corrington, *An Introduction to C. S. Peirce: Philosopher, Semiotician and Ecstatic Naturalist* (Lanham: Rowman and Littlefield, 1993), 179, 202–03.

with the experience of Thirdness, the experience of mediation, purpose and intelligibility, we may hypothesize that such experience depends on the reality of the eternal, necessary and uncreated ground of Thirdness, known in Christian tradition as God the Holy Spirit.

I suggest, then, a Trinitarian version of the cosmological argument arising out of the 'semiotic model'. The familiar version of the cosmological argument asks, with Leibniz, "why is there something rather than nothing?".[41] This rendering of the argument corresponds to the exercise of 'musement' on Secondness. The sheer fact of existence, the brute actuality of things, the difference between there being things and there not being things, is a function of Secondness. In a Trinitarian sense, the answer to Leibniz's question is that the brute existence of the world, as an alternative to its non-existence, is grounded in, and points towards, the eternal reality of the Word, the ground all Secondness.

Extending the cosmological argument beyond this familiar formulation to the category of Firstness we may ask, with F.R. Tennant, why there is beauty rather than no beauty?[42] The answer to the aesthetic version of the cosmological question may likewise be expressed in Trinitarian terms: the existence of beauty and quality in the world points to the reality of God the Father, who is the ground of all feeling and quality, the ultimate source of all Firstness.

Finally, completing the triad of cosmological questions, we may ask why is anything intelligible, why does anything makes sense? Einstein is said to have remarked that "the most incomprehensible thing about the universe is that it is comprehensible".[43] What, we may ask, is the explanation of "the unreasonable effectiveness of mathematics"?[44] In the light of the semiotic model the mystery of cosmic intelligibility points towards the work of the Holy Spirit, the ground of Thirdness,

[41] Gottfried Wilhelm Von Leibniz, "On the Ultimate Origination of the Universe," in *Monadology and Other Philosophical Essays, with an Introduction and Notes by Paul Schrecker* (1697; Indianapolis: Bobbs-Merrill, 1965), 85.

[42] F. R. Tennant, *Philosophical Theology, Volume 2: The World, the Soul, and God* (Cambridge: Cambridge University Press, 1928; reprint 1956), 89–93.

[43] Antonina Vallentin, *Einstein: A Biography*, trans. Moura Budberg (London: Weidenfeld and Nicolson, 1954), 24. Richard Swinburne's 'argument from the regularity of succession' is an example of an argument from the general intelligibility of the cosmos, as opposed to arguments from particular instances of order. See R. G. Swinburne, "The Argument from Design," *Philosophy* 43 (1968).

[44] Eugene P. Wigner, "The Unreasonable Effectiveness of Mathematics in the Natural Sciences," *Communications in Pure and Applied Mathematics* 13, no. 1 (1960).

the basis of all continuity, generality, purposefulness and interpretability. Importantly, this idea does not depend on holding that the world is uniformly intelligible, or that there is only one legitimate kind of rationality. The question of cosmic intelligibility would invite some kind of explanatory response even if such intelligibility was found to be localized in 'pockets' of the cosmos, was emergent from a background of chaos (Firstness), and gave rise to a plurality of legitimate ways of understanding the 'order of things'.[45]

In setting out this triad of versions of the cosmological argument I use the phrase 'points towards' with some care. I do not offer these formulations as attempts deductively to prove the existence of God. Rather, they are a way of revisiting this familiar kind of theistic 'proof' in a way that connects with the Christian tradition of Trinitarian thought as framed within my proposal for a Peircean model of the Trinity. When Anselm and Aquinas set out their famous arguments for the existence of God they were not engaged in a purely philosophical or logical quest of the kind attempted (and criticized) by post-Enlightenment philosophical theologians.[46] It may be better to think of Aquinas and Anselm as using philosophical tools to explore the limits of appropriate ways of speaking about the God known to them through Christian tradition and experience. Thought of in this way, their goal was mystical as much as philosophical.[47] That is the kind of exercise that I envisage when I suggest that 'musement' on the categories generates the possibility of a kind of cosmological argument for the existence of (the Triune) God. I am suggesting that the everyday (indeed, the every-moment) structure of our experience of the created order presents us with 'limit questions';[48] why is there something rather than nothing, beauty rather than blandness, intelligibility rather than chaos? These questions, formulated along the lines of the traditional cosmological argument, offer a connection – at once mystical and philosophical – between our experience of the world and the way that Christians have come to speak of the God known through Scripture and tradition.

---

[45] Cf. John Dupré, *The Disorder of Things: Metaphysical Foundations of the Disunity of Science* (Cambridge, Massachusetts: Harvard University Press, 1993).

[46] William C. Placher, *The Triune God: An Essay in Postliberal Theology* (Louisville: Westminster John Knox, 2007), 1–42.

[47] Ibid., 19–20.

[48] Cf. Willem B. Drees, *Religion, Science and Naturalism* (Cambridge: Cambridge University Press, 1996), 17–18.

Putting it another way, I am not attempting to move from the 'threeness' of the world to the 'threeness' of the Trinity by means of an argument that would work independently of the wider architecture of Christian thought.[49] Rather, given that second-order Christian reflection finds it necessary to hypothesize the 'threeness' of God, and given that (Peircean) philosophical analysis of experience finds it generative to recognize what appears to be a parallel kind of 'threeness' in the world and, combining these two, given that it appears coherent to hypothesize that the 'threeness' of the world is a vestige of the threefold creativity of God, so we may reverently submit to the possibility that our everyday, moment-to-moment, experience of the world is suffused with the immanent, full, and authentic presence of the triune Creator.[50]

This idea of the immediacy of the categories in our experience, and hence of the directness with which we are able to perceive, as it were, the touch of God, is captured in Peirce's description of musement as a 'little kiss' (*petite bouchée*) with the three universes of experience. In the light of the theology of nature outlined in Chapter 5, which itself drew on the semiotic approach to the Trinity and the Incarnation in Chapters 2 and 3, we might wish to take such moments of heightened awareness of an experiential contact with the ground of our being to be a *petite bouchée* with the One whose two hands continually hold us in existence.

---

[49] I use 'threeness' here in the same specific sense as that employed towards the end of §6.2.

[50] I introduced the idea that vestiges of the Trinity in creation reflect the immanent, full, and authentic work of God in §5.3.3.

GUESSES AT SOME RIDDLES

> So, continuing the counsels that had been asked of me, I should say, "Enter your skiff of Musement, push off into the lake of thought, and leave the breath of heaven to swell your sail. With your eyes open, awake to what is about or within you, and open conversation with yourself; for such is all meditation."
>
> C. S. Peirce, 1908[1]

The title of this brief chapter is an allusion to the sketch that Peirce made in 1887–1888 for a book that was never published.[2] My choice of title is intended as a gesture to the fact that, as noted in the Introduction, this whole book amounts to one big guess. It is also intended as an acknowledgement that, ambitious as this guess is, loose ends of course remain.

One such thread concerns the question of the nature of Trinitarian 'personhood' and the relation of this to conceptions of the human 'self'. In §7.1.1 I approach this question in the context of the merits and limitations of the traditional 'psychological' and 'social' analogies for the Trinity. In §7.1.2 I discuss ways in which, on the face of it, the semiotic model coheres most closely with the psychological analogies. In §7.1.3 I outline Peirce's semiotic approach to the self. I argue that Peirce's account of selfhood presents a critique of the psychological and social analogies alike, yet also suggests a way in which the insights of each of those approaches may be integrated without incorporating the troublesome consequences of either.

In the last sections of the book-proper I make two guesses about Firstness. In §7.2.1 I take up John Zizioulas's argument that the free-

---

[1] Charles S. Peirce, *The Essential Peirce: Selected Philosophical Writings, Volume 2 (1893–1913)*, edited by the Peirce Edition Project (Bloomington: Indiana University Press, 1998), 437. The image of the breath of heaven swelling the sail is apparently drawn from William Cowper's poem, "Human Frailty".

[2] ——, *The Essential Peirce: Selected Philosophical Writings, Volume 1 (1867–1893)*, edited by Nathan Houser and Christian Kloesel (Bloomington: Indiana University Press, 1992), 245–79. One version of the opening page read, "Notes for a Book to be entitled 'A Guess at the Riddle,' with a Vignette of the Sphinx below the Title" (245).

dom of human persons is grounded in the free personhood of the
Father. I argue that the semiotic model invites a parallel argument,
to the effect that the 'goodness' of creation is, in a sense, guaranteed
and sealed by the reality of the ever-emergent Firstness that is a 'like-
ness' of the Father's role in the perichoretic unity of the Trinitarian
persons.

In §7.2.2 I note a suggestion that has been made, from a psychoana-
lytic perspective, about the root of Peirce's melancholy. This leads to
some brief remarks on the relation of Firstness to the 'maternal', with
some possible implications for attitudes to the gender-specific lan-
guage in which Trinitarian thought has traditionally been articulated.
It also leads to a guess about the nature of the creaturely existence for
which we might hope at the eschaton.

Beyond this chapter there is an epilogue, in which I ask what might
have happened if the Fathers had known Peirce.

7.1   *Trinitarian Selfhood: Psyche, Society or Semiosis?*

7.1.1   *Psychological and Social Analogies for the Trinity*

In my explorations of the possible connections between Peirce's phi-
losophy and Trinitarian theology I have generally followed the tra-
ditional use of the term 'person' for what, according to Christian
theology, is threefold in God. In doing so, I have set aside the ques-
tion of the nature of Trinitarian personhood. I now turn to consider
how Peirce's philosophy may illuminate that question, and I shall do
so by considering how the semiotic model may be capable of clarifying
the merits and limitations of the so called 'psychological' and 'social'
analogies of the Trinity.

Alongside the idea that the distinctions between the Trinitarian per-
sons are constituted by their relations (§2.4.1), Augustine's other major
contribution to the doctrine of the Trinity was his exploration of vari-
ous 'psychological analogies'.[3] Augustine suggested several such analo-
gies based on the faculties of the human mind, the best known being
the triads of mind-knowledge-love, memory-understanding-will, and

---

[3] J. N. D. Kelly, *Early Christian Doctrines*, 5th ed. (London: A & C Black, 1977),
276–79.

remembering-knowing-loving.[4] Analogies of the Trinity based on the human mind had previously been suggested by Eastern writers such as Gregory of Nyssa,[5] but it was through Augustine that the use of psychological analogies became characteristic of Western Trinitarian thought. Anselm subsequently developed Augustine's strategy further by attempting to show that not only does the mind offer an analogy for the Trinity, but that it can be demonstrated by the application of logic that the structure of thought (and therefore, according to Anselm, the being of God) are necessarily triadic.[6] Karl Rahner's Trinitarian theology, with its emphasis on the idea that God is by nature "self-communicating", is a twentieth century example of an approach that has much in common with Augustine's psychological analogies.[7]

The merit of the psychological analogies is that they offer, at least in principle, a way of thinking about the distinctiveness of the three persons of the Trinity that does not undermine the oneness of God. For example, according to Augustine, the triad of mind-knowledge-love expresses the way in which the unified functioning of the psyche is constituted by an irreducibly threefold relation between elements that differ from one another and yet have no existence independent of the whole. The main problem with the psychological analogies may perhaps be clarified by using the terminology that I introduced in Chapter 5 (§5.3.1). In the psychological approach, certain aspects of the mind, and their relation to each other, are taken to be analogous to the Trinitarian persons and their relations. If the argument stopped there, these analogies might be taken to be no more than humanly-constructed ways of speaking about the way in which, in God, there can be plurality-in-unity. However, suppose that the further step is taken of holding that the human mind is a 'likeness' of the plurality-in-unity of God; that is, the mind is taken to have been created in such a way that it genuinely resembles the being of God. It is then tempting to conclude, from a conviction

---

[4] Augustine, *The Trinity*, ed. John E. Rotelle, trans. Edmund Hill, The Works of Saint Augustine: A Translation for the 21st Century (New York: New City Press, 1991), IX.2–IX.8, X.17–X.19, XIV.11.

[5] Michel Barnes, "Augustine in Contemporary Trinitarian Theology," *Theological Studies* 56 (1995): 238–39. Barnes argues that the idea that Greek and Latin Trinitarian theology reflect two opposed "paradigms" is a recent and mistaken construction which may be traced to the work of Theodore de Régnon in the late nineteenth century.

[6] Roger E. Olson and Christopher A. Hall, *The Trinity* (Grand Rapids: William B. Eerdmans, 2002), 56.

[7] See, for example, Karl Rahner, *Theological Investigations Volume 4*, trans. Kevin Smyth (London: Darton, Longman & Todd, 1966), 236.

about the unity and transcendence of God, that the human mind and human personhood are best understood in terms of, as Rahner puts it, an "isolated individualism".[8]

Partly in response to problems such as this there has been much recent interest in the development of 'social' models of the Trinity. Although the model of the Trinity as a community of conscious persons is often associated particularly with the writings of the Cappadocian Fathers, it is arguable that this represents an oversimplification of their theology.[9] In fact social models of the Trinity may owe as much to the medieval theologian Richard of St. Victor (d. 1141), who argued that perfect love, in order to be free of selfishness, must involve three persons.[10]

Jürgen Moltmann's "social doctrine of the Trinity" illustrates some key features of contemporary attempts to develop alternatives to the traditional psychological approaches.[11] First, contemporary social models of the Trinity wish to avoid the implication that God is, as Moltmann puts it, an "absolute subject".[12] That is, social Trinitarians find in the psychological analogies, along the lines mentioned above, a danger of conceiving of God as an isolated autonomous individual.[13] Second, this concern stems from a conviction that human persons are always persons in relation to one another.[14] Implicit in the relation that social Trinitarians see between these first two concerns is, I suggest, a sense that an account of humans as persons-in-relation should be understood to be grounded ontologically in some parallel truth about the being of God. In other words, again using the terminology that I found helpful in §5.3.1, social Trinitarians wish to hold that the

---

[8] ——, *The Trinity*, trans. Joseph Donceel, with an Introduction, Index and Glossary by Catherine Mowry LaCugna (New York: Crossroad Herder, 1999), 119–20. It is often argued that the "modern" individualist concept of personhood derives from the line of thought stemming from Augustine, and particularly the definition given by Boethius (c.480–524) of person as "individual substance of a rational nature". See, for example, John Habgood, *Being a Person: Where Faith and Science Meet* (London: Hodder and Stoughton, 1998), 55–73.

[9] Sarah Coakley, "'Persons' in the 'Social' Doctrine of the Trinity: A Critique of Current Analytical Discussion," in *The Trinity*, ed. Stephen T. Davis, Daniel Kendall, and Gerald O'Collins (Oxford: Oxford University Press, 1999), 125.

[10] Olson and Hall, *The Trinity*, 58–59.

[11] Jürgen Moltmann, *The Trinity and the Kingdom of God: The Doctrine of God*, trans. Margaret Kohl (London: SCM Press, 1981), 157.

[12] Ibid., 129–30.

[13] Ibid., 13–16, 139.

[14] Ibid., 145.

relational basis of human personhood is a 'likeness' of the being of God. In other words, God has intentionally created human social relations in such a way as to resemble something about God's own being. Social Trinitarians, of course, then take the further step of suggesting that this likeness consists in a likeness of the relations between human persons to the relations between the Father, Son and Spirit.[15]

Social models of the Trinity have the advantage of cohering with, for example, Jesus' practice of praying to the Father. In the light of such scriptural witness it does not make sense, social Trinitarians argue, to deny that each of the Trinitarian persons possess their own "centre of consciousness".[16] However, an insistence that each Trinitarian person must be, or possess, a distinct centre of consciousness illustrates the main problems with social models of the Trinity. First, it is difficult for such models to evade the charge that they are inconsistent with full affirmation of the unity of God. In short, social analogies imply tri-theism.[17] Second, the desideratum of giving an account of the distinctiveness of the persons and their limitation to three in number is much more difficult for social models than it is for psychological analogies.[18] As Moltmann himself acknowledges, only if the Trinitarian persons differ, in some respects, in the nature of their personhood can the perichoretic unity of the persons necessarily involve three and only three such subsistences:

> The doctrine of the three hypostases or persons of the Trinity is dangerous too, because it applies one and the same concept to the Father, the Son, and the Holy Spirit. This suggests that they are homogeneous and equal, namely hypostases, persons or modes of being. But the heading hypostasis, person or mode of being blurs the specific differences between the Father, the Son and the Holy Spirit.... The 'three Persons' are different, not merely in their relations to one another, but also in respect of their character as persons, even if the person is to be understood in his relations, and not apart from them. If we wanted to remain specific, we should have to use a different concept in each case when applying the word 'person' to the Father, the Son, and the Spirit.[19]

The requirement that the unity of God rests on the perichoresis of three persons, each of whose personhood is of a different nature from the

---

15 Ibid., 155–56.
16 Ibid., 146.
17 Rahner, *The Trinity*, 115.
18 Olson and Hall, *The Trinity*, 59.
19 Moltmann, *Trinity and the Kingdom*, 189.

others, immediately implies a difference from the concept of human personhood. This is so even if the human concept of personhood is understood 'relationally', since human persons are surely all persons in the same sense as one another.[20]

These problems with social models of the Trinity invite a reassessment of the possibilities offered by the psychological analogies: in evaluating Augustine's project we ought to be wary of throwing the baby out with the bathwater.[21] The two approaches, social and psychological, may ultimately prove to be complementary rather than competitive,[22] in which case, as I shall explore below, perhaps the 'semiotic model' may help to mediate between the two traditional approaches.

7.1.2   *The Psychological Analogies Re-visited*

Let us first note some resonances of the semiotic model with the psychological analogies. In the first place, in the semiotic model, as in Augustine's approach, the three *hypostases* are understood as corresponding to what may be regarded as aspects of the internal structure of thought. Indeed, one of Augustine's lesser known psychological analogies, which concerns the process of perception, contains some hints of Peirce's concept of the process of semiosis. According to Augustine, perception involves three elements: (i) the external object; (ii) the mind's representation of the object; and (iii) "the intention or act of focussing the mind".[23] These elements arguably have some similarities with the Peircean triad of object, sign-vehicle (in this case a mental sign), and interpretant (a mental 'act') respectively:

> When we see some particular body there are three things which we can very easily remark and distinguish from each other. First of all there is the thing we see, a stone or a flame or anything else the eyes can see, which of course could exist even before it was seen. Next there is the actual sight or vision, which did not exist before we sensed the object presented to the sense. Thirdly there is what holds the sense of our eyes on the thing being seen as long as it is being seen, namely the conscious

---

[20] The political direction of Moltmann's own theology implies as much, as for example in his advocacy of the United Nations' Universal Declaration of Human Rights: see Jürgen Moltmann, *Experiences in Theology: Ways and Forms of Christian Theology* (Minneapolis: Fortress Press, 2000), 81.

[21] Anne Hunt, *What Are They Saying About the Trinity?* (New York: Paulist Press, 1998), 63–64.

[22] Olson and Hall, *The Trinity*, 60.

[23] Kelly, *Early Christian Doctrines*, 276–77.

intention. These three are not only manifestly distinct, but of different natures.[24]

Furthermore, when Augustine considers the situation in which the object has been removed but thought about the object continues, he touches on something resembling the ongoing flux of Peircean semiosis:

> For even when the [object] is taken away…there remains a likeness of it in the memory, to which the will can again turn the attention to be formed by it from within, just as the sense was formed from without by the sensible body presented to it. And so one gets another trinity, out of the memory and internal sight and the will which couples them together; and when these three are *coagitated* into a unity the result is called cogitation or thought, from the very act of *coagitation*.[25]

Aquinas developed Augustine's better-known analogy of mind-knowledge-love in a way that likewise has Peircean resonances. Aquinas suggested that, in order to know itself, the mind must form an image or likeness of itself, the *verbum mentis* (word of the mind).[26] If the mind is to know itself perfectly then, Aquinas argues, the v*erbum mentis* that the mind generates must be of the same substance as the mind itself. When something is of the same substance as that which brings it forth we call the process 'generation' or 'begetting'. For this reason the *verbum mentis* can also be called the 'child' or the 'son'.[27] Loving, on the other hand, does not involve creating an image of the thing loved but "a certain vital movement and impulse" towards it.[28] Again, the parallels are not exact; nevertheless, the semiotic model and Aquinas's concept of the *verbum mentis* have in common the possibility of giving an account of why the second person of the Trinity is called the Word and of why the origin ('procession') of the Spirit is different from the generation (begetting) of the Son (cf. §2.3.2).[29]

We may say, then, that the triads of Firstness-Secondness-Thirdness and object-sign-interpretant in the semiotic model are functionally

---

[24] Augustine, *The Trinity*, XI.2.

[25] Ibid., XI.6.

[26] Bernard J. Lonergan, *Verbum: Word and Idea in Thomas Aquinas* (Notre Dame: University of Notre Dame Press, 1967), William C. Placher, *The Triune God: An Essay in Postliberal Theology* (Louisville: Westminster John Knox, 2007), 133–34.

[27] Thomas Aquinas, *The Summa Theologica of Thomas Aquinas*, 22 vols. (London: Burns, Oates and Washbourne, 1920–1924), Part 1, q. 27.a.2.

[28] Ibid., Part 1, q. 27.a.4.

[29] Cf. Placher, *Triune God*, 134.

equivalent to Augustine's psychological analogies. The semiotic model, like those analogies, aims to offer a way of understanding how the Trinitarian persons are irreducibly distinct from one another, and why they are limited to three (not four, five, or more). Augustine himself acknowledged that his psychological analogies were imperfect because, although the various triads are found within the human being, they are not together sufficient to constitute the human psyche, whereas the Trinity *is* God, not something *in* God.[30] The semiotic model may be an improvement on Augustine's approach in that it is based on an account of mental processes that claims to be intrinsically (rather than arbitrarily) triadic in structure. Furthermore, whereas Augustine's psychological triads would be difficult to relate closely to contemporary approaches to psychology and neurobiology, Peirce's semiotics holds at least the possibility of demonstrating consonance with, and of contributing to, current investigations in cognitive science and the philosophy of mind.[31] However, as well as cohering with, and perhaps improving on, the psychological analogies, a Peircean approach also suggests serious problems with psychological models of the Trinity. The difficulties will become apparent as, in the following section, we turn to consider Peirce's own account of the relation between semiosis and the formation of the 'self'.

7.1.3   The Semiotic Model and Peirce's Approach to the Self

Vincent Colapietro has argued that Peirce's approach to the self can be understood in terms of three main "moments" of its development.[32] The first phase is represented in a series of three articles which appeared in *The Journal of Speculative Philosophy* in 1868–1869, while Peirce was still in his twenties.[33] The second phase is represented by the five

---

[30] Lewis Ayres, *Nicaea and Its Legacy: An Approach to Fourth-Century Trinitarian Theology* (Oxford: Oxford University Press, 2004), 381. See Augustine, *The Trinity*, XV.7.

[31] For example, Short uses Peircean semiotics to criticize and clarify contemporary accounts of 'mental content' in a way that it seems unlikely would be achieved by attempting to apply Augustine's triads. T. L. Short, *Peirce's Theory of Signs* (Cambridge: Cambridge University Press, 2007), Chapter 11.

[32] Vincent M. Colapietro, *Peirce's Approach to the Self: A Semiotic Perspective on Human Subjectivity* (New York: State University of New York Press, 1989), 67–68.

[33] The articles are *Questions Concerning Certain Faculties Claimed for Man*, 1868 (EP1.11–27), *Some Consequences of Four Incapacities*, 1868 (EP1.28–55) and *Grounds of Validity of the Laws of Logic: Further Consequences of Four Incapacities*, 1869 (EP1.56–82). For a discussion of these articles see Robert S. Corrington, *An Introduc-*

articles that appeared in *The Monist* from 1891–1893 (see §5.1.2). The third phase is reflected in his later writings on pragmatism after the turn of the century.

In the series in *The Journal of Speculative Philosophy*, Peirce sets out his distinctive semiotic arguments against the Cartesian notion of an autonomous conscious self. Peirce begins by arguing against the possibility of any intuitive (unmediated, uninterpreted) perception or knowledge, whether of the self or of the outside world (EP 1.11–22). He goes on to deny that we have any power of 'introspection'; rather, all of our knowledge of our internal world depends ultimately on observation of our relation to the external world (EP 1.22–23). For example, although an emotion may appear to be an entirely internal state, to which we have direct access by introspection, all emotions are in fact 'about' something external. When we feel angry we feel angry *about* something (EP 1.23). If we do not have any immediate access to our inner self how do we develop our sense of selfhood? Peirce argues that a child only becomes aware of themselves as a self when they encounter their own ignorance. A parent tells the child that the stove is hot; the child tells herself that it is not. Only when she touches it does the child become aware that the testimony of others is able to reveal things that she does not know: "So testimony gives the first dawning of self-consciousness" (EP 1.20). Thus, in contrast to the Cartesian search for indubitable beliefs as the foundation for the self, Peirce offers what may be thought of as a negative view of the self: "In short, error appears, and it can be explained only by supposing a self which is fallible" (EP 1.20). As Colapietro puts it, consciousness of oneself as distinct from others originates as a hypothesis to explain the "anomalies and contradictions" presented to us by the world.[34]

I am unable to evaluate here the cogency of Peirce's assertions about the processes of child development. Nevertheless, his overall point about human self-consciousness seems persuasive. We are aware of ourselves as a 'self' by virtue of becoming aware of, and attempting to minimize, the fallibility of our interpretations. In Chapter 4 I explored the application of semiotic ideas to the scientific field of origin of life research. There, in a move that parallels Peirce's concept of the self,

---

tion to C. S. Peirce: Philosopher, Semiotician and Ecstatic Naturalist (Lanham: Rowman and Littlefield, 1993), Chapter 2.

[34] Colapietro, *Peirce's Approach to the Self*, 72.

I suggested that the origin of a capacity for making (fallible) interpretations was a key step in the emergence of life (§4.2.2). Putting this in terms of Peirce's negative concept of the self, one might say that the question of the origin of life is a question not so much about the emergence of positive capabilities such as self-replication, autocatalysis, or enclosure – the properties on which most origin of life work focuses – but rather, is a question of the emergence of the capacity to make mistakes. Quoting from Shakespeare's *Measure for Measure*, Peirce summed up his conception of the self as follows:

> The individual man, since his separate existence is manifested only by ignorance and error, so far as he is anything apart from his fellows, and from what he and they are to be, is only a negation. This is man,
>   proud man,
> Most ignorant of what he's most assured,
> His glassy essence.[35]

Some commentators have been disturbed by Peirce's apparently negative conception of the self. So Richard Bernstein:

> If my separate existence is manifested only by ignorance and error, and if I differ from my fellow man only by being a negation, then "where" and "what" is the "I" that controls and adopts ultimate ideals?[36]

In response to such objections Colapietro shows how, beginning particularly with the second "moment" in Peirce's thinking on the subject, his concept of the self is able to give a positive account of the reality of personal autonomy and individuality without succumbing to the temptation to postulate an isolated Cartesian self-consciousness.[37] In *The Law of Mind* (1892), the third article in the *Monist* series, the self is explicitly characterized as "some kind of coördination or connection of ideas" (EP 1.331).[38] Furthermore:

> the word coördination…implies a teleological harmony in ideas, and in the case of personality this teleology is more than a mere purposive pur-

---

[35] EP 1.55. The quote is from Act 2, Scene 2.
[36] Richard Bernstein, 1965, quoted in Short, *Peirce's Theory of Signs*, 312.
[37] Colapietro, *Peirce's Approach to the Self*, 74–75.
[38] By 'idea' it is clear that Peirce had in mind something broader than a purely intellectual conception: "Three elements go to make up an idea. The first is its intrinsic quality as a feeling. The second is the energy with which it affects other ideas…The third element is the tendency of an idea to bring along other ideas with it" (EP 1.325). In *The Law of Mind* Peirce gives considerable attention to the nature of the continuity of feelings (EP 1.323–325).

suit of a predeterminate end; it is a *developmental teleology*. (EP 1.331, italics mine)[39]

As Colapietro puts it, "to be a self is to be in the process of becoming a self, a process that is never complete".[40] Peirce remarked that, "in all his life long no son of Adam has ever fully manifested what there was in him" (CP 1.615), to which Colapietro adds, "This is one of the reasons why death is *always* tragic".[41]

This more positive aspect of Peirce's account of the self (compared to that developed in the three articles in the *Journal of Speculative Philosophy*) comes to fruition in the third phase of his thoughts on self-hood, particularly in the connection that he made between consciousness and 'self-control'.[42] Colapietro expresses this particularly clearly:

> Peirce's views imply that there is a hierarchy of minds. At the most rudimentary level, there are interpretive agents that do not essentially alter their patterns of interpretation; they always respond to the same stimuli in the same manner. An example of this would be an animal whose behavior was completely bound by instinct. At the intermediary level there are interpretive agents that, in the course of their lives, relinquish certain patterns of interpretation and acquire others. For Peirce, such alterations in the modes of interpretation are the same as alterations in habits of action. The nature of such minds is relatively plastic. At the highest level, there are autonomous interpreters, agents *who* (rather than *which*) can engage in acts of self-interpretation, self-criticism, and self-control. There is, in principle, no limit to these acts: "Now control itself may be controlled, criticism itself subjected to criticism".[43]

At higher levels of self-control, then, "a man can be his own training-master and thus control his self-control" (CP 5.533). To become one's own training master requires two things. First, one must have the capacity to form signs of oneself, so as to be able to imagine the possible consequences of different actions.[44] As Peirce wrote in 1893:

---

[39] The continuation of this passage (except for a few intervening sentences) was quoted in §5.1.2, beginning, "Were the ends of a person already explicit…".

[40] Colapietro, *Peirce's Approach to the Self*, 77.

[41] Ibid., 76.

[42] Short, *Peirce's Theory of Signs*, 311–12.

[43] Colapietro, *Peirce's Approach to the Self*, 110–11. The last sentence is quoted from CP 5.442 (EP 2.348), both of which read "may itself" in the original.

[44] The types of signs required for such imaginative acts would include, for example, mental diagrams (see §3.3).

> People who build castles in the air do not, for the most part, accomplish much, it is true; but every man who does accomplish great things is given to building elaborate castles in the air and then painfully copying them on solid ground.... A decapitated frog almost reasons. The habit that is in his cerebellum serves as a major premiss. The excitation of a drop of acid is his minor premiss. And his conclusion is the act of wiping it away. All that is of any value in the operation of ratiocination is there, except only one thing. What he lacks is the power of preparatory meditation. (CP 6.286)[45]

Peirce emphasized that the capacity to perform inward manipulations of mental signs requires an ability to refrain from acting.[46] His emphasis on the importance to the processes of reasoning of 'internal' signs may be understood as a development of his idea, introduced in the articles in the *Journal of Speculative Philosophy* series in the late 1860s, that, "All thought is in signs" (EP 1.23–24).

The second requirement for attaining the highest levels of self-control is that one must be able to create or recognize, adopt or submit to, some ideal or goal against which the consequences of one's actions are to be judged. This is one aspect of the way in which Peirce held generals (including general types of outcome) to be causally (though non-mechanistically) effective. I discussed in §4.2.1 the way in which general types of outcome can be causally effective in simple biological systems, and in §5.2.1 I explored how higher levels of semiotic capability give rise to the possibility of *agape* love. Robert Corrington argues that we see here an under-recognized, intrinsically religious, dimension to Peirce's thought, evident in Peirce's remark that love of what is good for all is the essence of Christianity. The possibility of adopting an ultimate ideal against which all of one's actions will be judged is, Peirce suggests, the basis for saying that "the service of Christ is perfect freedom" (EP 1.72, footnote). It is also notable that, as Colapietro puts it:

> Agents through whom the ideal is made actual are signs, since such agents perform the essential function of a sign – namely, to render inefficient relations efficient (CP 8.332; 1904). Insofar as, say, the ideal of justice exerts its attractiveness *through* the life of an individual and,

---

[45] It is not clear why Peirce introduces the role of the cerebellum here given that the frog is imagined to have been decapitated; it seems possible that he means 'decerebrated'. Nevertheless, Peirce's point is clear: a reflex action constitutes a primitive form of self-controlled reasoning.

[46] Colapietro, *Peirce's Approach to the Self*, 115.

thereby, the relation between the ideal and the actual is made efficient, that individual functions as a sign.[47]

This corollary of Peirce's idea that the highest forms of the development of selfhood consist in seeking to embody an ideal are entirely consonant with my suggestion that the Christian concept of Incarnation may be understood as a recognition of Jesus' life as an embodied 'qualisign' of the being of God (§§3.1.2–3.1.3).

The self, then, does not exist apart from the various sign-processes that constitute it. Nevertheless, Peirce rejected the idea that consciousness is merely an 'epiphenomenon' on the grounds that, for the reasons discussed above, our inward manipulation of signs has real effects, both on our own development as selves and, indirectly, on events in the world.[48] Any hint of paradox about the assertion that our self is entirely constituted by semiotic processes and yet exerts real agency in the world is removed by recognizing that, as Short puts it, "the flesh and blood body lies at the bottom of it all":

> Selfhood or personality is an aspect of the organization of that body's behavior. The organization in which selfhood consists is irreducible to the laws governing the operations of the body's parts. But it is still the body that acts and suffers.[49]

This emphasis on the relevance of concrete embodment offers a response to a criticism sometimes levelled at the psychological analogies, that they lend themselves to an understanding of the rational mind as independent of, or superior to, bodily existence.[50] That is to say, in the light of Peirce's concept of selfhood we may be less tempted to move from reflection on a psychological analogy for the Trinity to a Cartesian view of the human mind as separable from the body.[51] Moreover, although the self is individuated in part by being an aspect of the organization of a particular physical body, the semiotic basis of selfhood calls into question, via Peirce's anti-Cartesian arguments already mentioned, any idea of the self as an isolated autonomous

---

[47] Ibid., 97.

[48] Ibid., 113.

[49] Short, *Peirce's Theory of Signs*, 314.

[50] Colin E. Gunton, *The Promise of Trinitarian Theology* (Edinburgh: T&T Clark, 1991), 94.

[51] It does not mean, however, that the psychological analogies must be taken to imply that God's eternal being is physical; any talk about God involves reference to that which is infinitely qualitatively different from the physical cosmos (cf. §5.3.3).

individual. If the self comes into existence by representing itself, by talking to itself, then the self is inextricably woven into publicly accessible forms of semiosis. There is no fundamental difference between the self-formation that arises out of recognizing, in the face of our ignorance, the validity of the testimony of others, and the self-formation that comes from hearing one's own testimony about oneself. As Peirce puts it in his 1905 paper *What Pragmatism Is*:

> Two things here are all-important to assure oneself of and to remember. The first is that a person is not absolutely an individual. His thoughts are what he is "saying to himself," that is, saying to that other self that is just coming into life in the flow of time. When one reasons, it is that critical self that one is trying to persuade; and all thought whatsoever is a sign, and is mostly of the nature of language. The second thing to remember is that the man's circle of society (however widely or narrowly this phrase may be understood) is a sort of loosely compacted person, in some respects of higher rank than the person of an individual organism. (EP 2.338)

In the same vein, in an article written around 1893 on the subject of 'synechism' (Peirce's concept of continuity; see §1.2.2), he wrote that:

> Nor must any synechist say, "I am altogether myself, and not at all you." If you embrace synechism, you must abjure this metaphysics of wickedness. In the first place, your neighbours are, in a measure, yourself, and in far greater measure than, without deep studies in psychology, you would believe. Really, the selfhood you like to attribute to yourself is, for the most part, the vulgarest delusion of vanity. (EP 2.2)

Where, then, does Peirce's semiotic approach to the self leave the psychological and social analogies of the Trinity? I noted above (§7.1.2) that the triads of Firstness-Secondness-Thirdness and object-sign-interpretant in the semiotic model are functionally equivalent to Augustine's psychological analogies. Thus the semiotic model, like the psychological analogies, offers an account, based on a philosophical analysis of the basis of mental operations, of how the Trinitarian persons may be understood to be irreducibly distinct from one another, and of why their number is limited to three. Indeed, I suggested that there might be grounds for considering the semiotic model to have advantages over Augustine's analogies in this regard. However, Peirce's approach to the self also suggests significant caveats that must be attached to any psychological analogy for the Trinity. We presumably do not wish to say that God comes to consciousness of God's-self by encountering God's own fallibility or ignorance. Yet, in the light of Peirce's account,

there is no other way of conceiving of an individual conscious self, at least on any close analogy with human self-consciousness.

Although in many respects closer to the psychological analogies in formal structure, the semiotic approach nevertheless delivers exactly what social Trinitarians are after: namely, an account of the fundamental structure of reality that rejects what Moltmann refers to as the notion of the 'absolute subject' (§7.1.1). Thus, as discussed above, Peirce's semiotic approach to the self offers a philosophical account of why human selves cannot plausibly be regarded as isolated autonomous individuals. The self comes into existence by representing itself, by talking to itself, using publicly accessible and socially-acquired forms of semiosis. Moreover, in the face of ignorance and fallibility, finite selves develop their sense of selfhood by comparing their own testimony with that of others. As Peirce memorably puts it in the quotation above, "the selfhood you like to attribute to yourself is, for the most part, the vulgarest delusion of vanity". However, although the semiotic approach delivers exactly the insight most valued by social Trinitarians – that is, the inherently social nature of human selves – it does not invite a strategy in which this insight is drawn as a conclusion from reflecting on the allegedly social nature of the intra-Trinitarian relations. The social nature of the self is a conclusion that may be affirmed simply on the basis of Peirce's analysis of the role of semiosis in the formation of finite selves. Projecting this account of human selves onto the 'selfhood' of the Trinitarian persons would be problematic, for in human society, according to the semiotic perspective, the individuals that emerge by virtue of their relations with others are necessarily ignorant and fallible. If we were not, if we all had full knowledge of ourselves, of the world, and of each other, then there would not be a society of different minds but a single continuous mind.[52]

The usual dividing line between the traditional approaches is drawn in terms of whether God should be considered to have one or three 'centres of consciousness'.[53] If persons (human or divine) are no longer to be regarded as demarcated centres of consciousness then the key distinction between the psychological and social analogies becomes blurred. The semiotic model in effect relativizes the concept

---

[52] Cf. Corrington, *An Introduction to Peirce*, 102.
[53] See, for example, Rahner, *The Trinity*, 106–07.

of consciousness. Thought is regarded as distributed between the community of inquirers, not localized in isolated minds. As Peirce put it in 1902, thought "is more without us than within. It is we that are in it, rather than it in any of us" (CP 8.257).

I suggest, therefore, that the semiotic model, and Peirce's semiotic approach to the self, may offer the grounds for an integration of the psychological and social analogies.[54] Such an integration would regard the triadic processes of semiosis as ontologically primary and would avoid attributing 'consciousness', understood on any close analogy with human consciousness, to either the Trinity collectively or to the Trinitarian persons individually.[55] It would deliver what is the main strength of the traditional psychological analogies by providing a way of thinking about how the Trinitarian persons may be understood to be irreducibly distinct from one another, and of why their number is limited to three, without undermining the unity of God (see §2.4.2). The semiotic approach also achieves what the social Trinitarians seek, namely, an account of human personhood that emphasizes that persons are always persons-in-relation. Unlike the usual social models of the Trinity the semiotic approach does not derive this conclusion from a view of God as a society of conscious persons. Rather, it is a conclusion drawn from philosophical reflection on the relationship between finite selfhood and semiosis. Nevertheless, the social nature of human selfhood may properly be regarded, in the semiotic model, as grounded in the reality of God's being, since it is by granting to creation a likeness to (indeed, vestige of) God's own threefold perichoretic, semiotic, reality that finite creatures are able to engage in the processes of semiosis that give rise to their relational selfhood (see §5.3).

Likewise, the similarity of the semiotic model to traditional psychological approaches is qualified by the fact that the semiotic approach renders incoherent any account that portrays God in terms of an isolated individual consciousness. This does not mean that God can no longer be conceived as having a unitary purpose and agency;[56] purpose

---

[54] Cf. Hans Urs von Balthasar, *Theo-Drama Volume 3: Dramatis Personae: The Person in Christ* (San Francisco: Ignatius, 1992), 527.

[55] The claim, of course, is not that semiosis is somehow prior to God: the clear message of Chapters 2, 5 and 6 is that God is to be understood as the ground and source of semiosis and the underlying categories.

[56] Cf. Colapietro, *Peirce's Approach to the Self*, 92.

(Thirdness) and power (Secondness) may be understood, according to the semiotic model, as of the essence of God's being. In contrast, consciousness (of the kind experienced by humans) is a contingent product of the semiotic coming to selfhood of finite creatures.

In Chapter 5 I mentioned a potential objection to my semiotic approach to Trinitarian theology to the effect that it collapses the infinite qualitative difference between God and creation (§5.3.3). I hope that the above remarks may go some way towards deflecting such a suspicion since, when the traditional psychological and social analogies are examined in the light of the semiotic model, a very high degree of apophatic reserve is called for in any talk about God on analogy with human conscious agents. Such apophaticism about God's own subjective experience inevitably leads, however, to a further potential concern, namely, that the semiotic model may appear to imply an 'impersonal' understanding of God. The categories of Firstness, Secondness and Thirdness are, arguably, abstract metaphysical categories without an obvious direct connection to familiar ways of thinking about persons as subjective centres of consciousness and action. In the following section I address this concern by offering a guess about how the Firstness of the person of the Father may have implications for thinking about the 'goodness' of creation.

7.2   Two Guesses about Firstness

7.2.1   The Freedom of the Father and the Goodness of Creation

Contemporary Orthodox theologian John Zizioulas has argued that the crucial patristic contribution to ontology was to identify personhood, rather than substance, as the most fundamental ontological category.[57] Zizioulas argues that if God is an impersonal substance, then all existence is bound by necessity. Only if, as in the Greek theological tradition, God's existence derives from a free person, God the Father, may the creature hope also to be free.[58]

---

[57] John D. Zizioulas, *Being and Communion: Studies in Personhood and the Church* (Crestwood, NY: St Vladimir's Seminary Press, 1985), 87–89.

[58] John D. Zizioulas, "The Doctrine of God the Trinity Today: Suggestions for an Ecumenical Study," in *The Forgotten Trinity, Volume 3: A Selection of Papers Presented to the BCC Study Commission on Trinitarian Doctrine Today* (London: British Council of Churches, 1991).

According to Zizioulas the (allegedly) Cappadocian innovation of identifying personhood as the basic ontological category arose through a synthesis of the biblical affirmation of human freedom with the Greek interest in fundamental ontology.[59] Zizioulas acknowledges that human freedom is not "absolute" because the human "is tied by his createdness, by the 'necessity' of his existence".[60] However, it would be a mistake, Zizioulas argues, to conclude that God's freedom should be attributed to the divine 'nature':

> If the ground of God's ontological freedom lies simply in His "nature", that is, in His being uncreated by nature, whereas we are by nature created, then there is no hope, no possibility, that man might become a person in the sense that God is one, that is, an authentic person. But no, the ground of God's ontological freedom lies not in His nature but in His personal existence, that is, in the "mode of existence" by which He subsists as divine nature. And it is precisely this that gives man, in spite of his different nature, his hope of becoming an authentic person. The manner in which God exercises His ontological freedom, that precisely which makes Him ontologically free, is the way in which He transcends and abolishes the ontological necessity of the substance by being God as *Father*, that is, as He who "begets" the Son and "brings forth" the Spirit.[61]

I suggest that the semiotic model allows Zizioulas's insight to be reframed in a way that circumvents the difficulties associated with the notion of 'personhood', and that it does so without rejecting his idea that creaturely freedom derives in some sense from the fact that the Father's being is unconstrained by the category of substance (or by anything else). This reframing depends on recognizing that the key move in Zizioulas's argument is his suggestion that divine freedom cannot consist in God's 'nature' (i.e., in God's uncreatedness). If that were the case then creatures could not share God's freedom since they do not share the divine (i.e., uncreated) nature. Zizioulas's emphasis on the personal nature of the Father is then, in effect, a subsidiary part of the argument:

> …the being and life of God does not consist in the one substance of God but in the *hypostasis*, that is, *the person of the Father*. The one God

---

[59] Zizioulas, *Being as Communion*, 35.
[60] Ibid., 44. Cf. the concept of theological voluntarism that I linked with Peirce's idea of anancastic evolution, §§5.1.2, 5.2.3.
[61] Ibid.

is not the one substance but the Father, who is the "cause" both of the generation of the Son and of the procession of the Spirit.[62]

As we have seen in the longer quote above, according to Zizioulas it is by virtue of God's having God's own origin in the person of the Father, rather than in some non-personal substance, that God is free. In the terminology I used in §5.3.1, Zizioulas's argument is that, since human personhood is in some sense a 'likeness' of the personhood of the Father, so humans are able to share in a form of genuine freedom, a freedom that is 'like', and is grounded in, the Trinitarian freedom of Father, Son and Spirit.

The semiotic model coheres with what I have identified as the key move in Zizioulas's claim, in that, according to the semiotic model, the basis of creaturely freedom is a 'likeness' of the ontological structure of the world to the inner being of God. However, in place of the idea that the 'personhood' of the Father is the ultimate guarantor of this freedom, the semiotic model focuses our attention on the role of the Firstness of the Father. According to Zizioulas's account, the created order would be in some sense deficient if it were not possible for creatures to possess a form of freedom analogous to that of the personal freedom of the Father. The semiotic model suggests, in a similar way, that creation would be incomplete if it did not include a capacity to manifest genuine instances of Firstness, such Firstness being a real likeness (in the sense I introduced in §5.3.1) of the Firstness of the Father. As I noted in Chapter 2, the idea that Firstness is a genuine feature of the world may appear contrary to our expectations: being 'ingenerate' or 'unoriginate' is, at first sight, a characteristic more obviously associated with the nature of God than with features of the created order. However, as I have already argued (§2.2.2), such an assumption confuses the distinctive characteristics of the Father and Son with respect to one another (unbegottenness vs. begottenness) with the distinction between God and the world (uncreated vs. created).[63] In Zizioulas's account, the equivalent misconception would be that of identifying personal freedom with the nature of God (in general), instead of recognizing it as (in Zizioulas's view) the distinctive characteristic of the Father.

---

[62] Ibid., 40–41.
[63] The reason why understanding the Father as the 'source' of the Son and Spirit does not necessarily lead to subordinationism was discussed in §2.4.2.

This view of the theological importance of the reality of Firstness in the created order suggests a way of understanding the 'goodness' of creation (cf. Genesis 1:4, 1:10, etc.). Thus, I suggest, the 'goodness' of the created order might be understood in terms of the world having been structured in the full likeness of God, manifesting all three categories – Firstness, Secondness and Thirdness. In other words, the goodness of creation may be thought of in terms of the *completeness* of the likeness between the triune being of God and the threefold patterns of the created order. This *completeness* of the created order is manifest in the reality of all three categories, but it is sealed and guaranteed, particularly, by the reality of worldly Firstness, understood to be a 'likeness' of God the Father. In Chapter 5 (§5.2.2) I emphasized the way in which Firstness may be regarded as having an enduring role at every level of nature's hierarchies of organization, such that it is continually emergent from the structures and regularities (Secondness and Thirdness) of the universe. Manifestations of Firstness in the created order range from the indeterminacy of the timing of a quantum event through to the Firstness (the novel quality) of every new human personality.[64] Human persons themselves explore the potential of the world to generate new qualities when they embark on creative activities, including the explorations of Firstness involved in artistic creativity.

It is an extraordinary feature of the universe, I suggest, that new qualities (instances of Firstness) are continually arising afresh from the ontological fabric of the world. Why should this be so? Why did God not simply create the world in, so to speak, black and white? A world predominantly characterized by actuality (Secondness) and intelligibility (Thirdness), with a relative paucity of emergent Firstness, would nevertheless be impressive and awe-inspiring. Creatures would still, surely, have much reason to worship their God. Why, then, is there so much sheer extravagant 'quality' in the universe? Why not just one flavour of fine wine, instead of innumerable bouquets and palates?[65] Would creatures fail to enjoy their feasts? Why not just a handful of good tunes, instead of myriad melodies? Would creatures

---

[64] Cf. Colapietro, *Peirce's Approach to the Self*, 74.

[65] I find it significant that Jesus' first sign in John's Gospel is that of turning water into wine. It is notable that it was specifically the *quality* (Firstness) of the wine ('you have kept the good wine until now') that constituted the sign by means of which Jesus first 'revealed his glory' (John 2:10–11).

not still sing to their creator? Why not just a few dozen ways of being a beetle – a few score kinds of 'beetle quality' – instead of approaching half a million species in the order of Coleoptera?[66] Would we complain about the lack of biodiversity in creation? Why not just a few million qualities of human personality? Would we be likely to bump into our 'double'?

In short, the world is structured in such a way as to permit Firstness to be abundantly emergent. Firstness is continually precipitating afresh from the structures and patterns of Secondness and Thirdness. Furthermore, some forms of Firstness are brought to birth by the co-creative work of creatures themselves. This capacity for the exuberant, extravagant, and utterly excessive flowering of Firstness is, I am inclined to guess, at least part of what constitutes the 'goodness' of creation. And, according to the semiotic model, this aspect of the 'goodness' of creation may be understood to be particularly associated with the distinctive 'personhood' and creative work of God the Father. It is by bearing a likeness to the Trinity as a whole – Spirit, Word, *and* Father – that the created order is genuinely free – the reason why, when God "saw everything that he had made", that, "indeed, it was very good" (Gen. 1:31).

7.2.2 *Firstness and the Quest for the Maternal*

Much has been written about gender and the Trinity, an important topic to which I cannot attempt to add substantially here.[67] I wish simply to mention an interesting perspective that emerges from some speculations on the roots of Peirce's long-standing melancholy.

In his reflections on Peirce's psyche, Robert Corrington takes his cue from French psychoanalyst Julia Kristeva's investigations of the relation between literary creativity and the "quest for the maternal".[68] According to Corrington, "Kristeva argues that the use of language is only possible because of a prior betrayal of the maternal. The minute

---

[66] There is a story, perhaps apocryphal, that a group of theologians once asked evolutionary biologist J. B. S. Haldane what could be inferred about God from a study of evolution, to which Haldane is alleged to have replied that the Creator must have "an inordinate fondness for beetles". G. E. Hutchinson, "Homage to Santa Rosalia or Why Are There So Many Kinds of Animals," *The American Naturalist* XCIII, no. 870 (1959): 146, footnote 1.

[67] See, for example, Elizabeth A. Johnson, *She Who Is: The Mystery of God in Feminine Theological Discourse* (New York: Crossroad, 1992).

[68] Corrington, *An Introduction to Peirce*, 21–24.

we enter into the realm of public semiosis, we leave behind the creative and ejective ground of signification".[69] In other words, in Peircean terms, Kristeva identifies the maternal with the pre-semiotic ground of being, the category of Firstness, and the paternal with the operation of intelligible semiosis. Corrington interprets Peirce's persistent mental anguish as a reflection of his alienation from, and desire to re-connect with, the maternal:

> Peirce was a master of the art of advanced forms of signification. He could enter into several distinctive semiotic systems and codes with great ease and always find pathways for connecting them. Yet in doing so he pulled further and further away from the ground of signification, perhaps originally presented to him by his mother. I am persuaded that Peirce remained haunted throughout his life by a sense of melancholy loss, a loss felt on the fringes of all of his daring analyses of the basic structures of the world. His attempts to delineate the domain of firstness, both phenomenologically and cosmologically, are responses to the lost realm that his paternal affiliation drove him from…. His preoccupation with firstness was the one place where the maternal could leave some traces in his code-filled universe.[70]

Corrington's analysis of Peirce's psyche is speculative and perhaps fanciful. It is interesting, however, for reasons that go beyond the question of whether it is an accurate assessment of the root of Peirce's melancholy. In the first place, if Firstness may be identified with the 'maternal' aspects of the cosmos and Thirdness with the 'paternal' then, in the context of the semiotic model of the Trinity, the usual gender associations of the Trinitarian persons are immediately called into question. The First Person of the Trinity, the Father, is the one characterized by the (allegedly) maternal associations of Firstness. The Spirit, who is linked in the semiotic model with the female personification of Wisdom, is the one characterized by the (allegedly) paternal associations of structured semiotic systems. In that case the semiotic model provides its own internal critique of the uncritical attachment of gender ascriptions to the Trinitarian persons.

Second, Corrington's assessment is suggestive of what may perhaps be a general feature of creaturely existence, namely, that finite creatures yearn to be reconciled with the ultimate ground of Firstness. As Corrington puts it:

---

[69] Ibid., 22.
[70] Ibid., 22. The sentence after the ellipsis is on p. 24.

> The greatness of Peirce's melancholy is that it spawned a culture-trans-
> forming semiotics that has given later thinkers a means for moving
> backward toward the lost maternal that continually eluded Peirce.[71]

This point is not ultimately dependent on identifying Firstness with
the maternal or semiosis with the paternal. It coheres with the idea
that I suggested in Chapter 3, that the ubiquitous and ever-ramifying
patterns of otherness (Secondness) and mediation (Thirdness) that
characterize the world are the outward movement of the God who
ultimately offers, by the grace-endowed possibilities of those patterns
of difference and the overcoming of difference, the promise of God's
eventual unmediated presence (§3.4.2). I further suggested there that
emotional interpretants of signs, which are the kinds of interpretative
response in which the distinctions between sign, object and interpre-
tant appear, in some circumstances, to collapse, may offer a foretaste
and prolepsis of the promised unmediated presence of God.

If worldly Firstness is a foretaste of the possibility of our experi-
encing the unmediated presence of God – a presence that we may
hope will be realized at the eschaton – in what way will God experi-
ence *our* presence, and what kind of experience might we then have
of ourselves? A clue to this riddle may lie in the sense in which, as I
have alluded to in the previous section, every human being has their
own unique quality: the quality of personality, of personal history, of
the subjective experience of self. As Colapietro puts it: "To recognize
the firstness of the self is, in part, to see the individual self in its utter
uniqueness and qualitative wholeness".[72] Personal qualities grow. The
growth of the human person is a growth towards a unique personal
quality, the me-ness of me, the you-ness of you. Every person is there-
fore a unique centre of Firstness, the unique quality that is the quality
of being me or you.

Suppose that it is this total quality of our personal being that is
destined for eternity. Human personal qualities need space and time
to emerge. Without space we could not be differentiated from one
another. Without time we could not develop. Space requires Second-
ness: here, not there. Time requires Thirdness: the continuity between
past, present and future. However, space and time are aspects of the
created order. Suppose, further, that once the sheer quality of our

---

[71] Ibid., 24.
[72] Colapietro, *Peirce's Approach to the Self*, 74.

personhood, our Firstness, has arisen from the created matrix of Sec-
ondness and Thirdness, it is possible for that quality to subsist even
after the space-time universe has passed away. Our quality of being
would then be that very quality that has been enabled to emerge in
the created order of space and time.[73] It would encompass all that we
have been and have become, everything and everyone to whom we
are, and have been, in relation. It would consist in the total quality
that is the sum of our lives, including our own consciousness of that
quality, our self-consciousness. But it would subsist in a way that is
no longer dependent on the space-time order. Importantly, that total
quality would consist in the holistic quality of our embodied spatio-
temporal being, not merely in, say, our 'spiritual' or 'mental' qualities.
"I believe", as the Apostles' Creed puts it, in "the resurrection of the
body": not the body that is the present vehicle of our total quality of
existence, but a new, "imperishable" embodiment of that quality.[74]

When space and time come to an end, at the last trumpet, in the
twinkling of an eye, we will be changed.[75] And my guess at the riddle
is this: that then we will subsist as eternal centres of Firstness in the
presence of God's glory.

---

[73] Perhaps that is why God did not simply create heaven to begin with: cf. Chris-
topher Southgate, *The Groaning of Creation: God, Evolution and the Problem of Evil*
(Louisville and London: Westminster John Knox Press, 2008), 90–91.

[74] Cf. 1 Cor. 15:35–57.

[75] 1 Cor. 15:51–52.

EPILOGUE: IF THE FATHERS HAD KNOWN PEIRCE

> Christianity…has always been a religion seeking a metaphysic.
> Alfred North Whitehead, 1926[1]

This epilogue begins (§8.1) with an overview of the historical development of Trinitarian orthodoxy from the Council of Nicaea (325) to the Council of Constantinople (381). This first section tells the story in its standard form, which may be summarized by saying that it is the story of the rise and fall and rise again of the term *homoousion* in the fourth century. In the second section (§8.2) I re-narrate the story from a less familiar angle. This second story is that of the tragedy of the scripturally-based, implicitly semiotic, concepts of *Logos* and 'image' which, as the fourth century advanced, were to become victims of their then-inadequate metaphysical grounding. This section should not be taken to be of the same genre as the first. It is not intended as a piece of historical scholarship; rather, it is a hypothesis about what such scholarship might find if it looked at the story in a different way. The final section (§8.3) is a piece of pure playfulness: I ask, what if the Fathers had known Peirce?

8.1 *From Nicaea to Constantinople: Standard View*

In 324 Constantine became sole ruler of the Roman Empire.[2] Like other Roman emperors before him he thought the purpose of any religion was to secure the favour of its particular God. Accordingly, he feared that disunity within the Church brought about by the dispute over Arius's views might impair the effectiveness of the cult in supporting the state. In an attempt to restore unity to the Church he summoned a synod, which met at the imperial summer residence in Nicaea in

---

[1] Alfred North Whitehead, *Religion in the Making* (1926; New York: World Publishing Company, 1960), 50.

[2] In this section I draw largely on the admirable brief historical overview provided by Franz Dünzl, *A Brief History of the Doctrine of the Trinity in the Early Church* (London: T&T Clark, 2007).

325. The Council agreed an anti-Arian statement, the Nicene Creed, which affirmed (*contra* Arius) that the only-begotten Son is begotten 'from the substance of the Father' and is 'true God of true God'. The anti-Arian emphasis of the Creed was reinforced by its adoption of the term *homoousios*: the Son is of one substance (consubstantial) with the Father (§2.2.1).

Although many of the bishops opposed to the Nicene Creed were initially banished from their sees, Constantine subsequently pursued a conciliatory policy. In doing so he showed himself to be more interested in pursuing ecclesial unity than theological consistency. Among the rehabilitated bishops were Eusebius of Caesarea and Eusebius of Nicomedia. The two Eusebiuses soon began to orchestrate a witch-hunt against pro-Nicene bishops. Avoiding contentious theological issues (which would have aroused Constantine's displeasure) they successfully used accusations relating to morality and Church discipline as the basis for the piecemeal deposition of supporters of Nicaea by local synods. Athanasius of Alexandria was one of the Bishops who fell victim to this anti-Nicene reaction.

Marcellus, bishop of Ancyra, countered by submitting what he intended to be a pro-Nicene work on Christology to the emperor. Marcellus's defence of Nicaea centred on his *mia-hypostatic* doctrine; the view that there is only one *hypostasis* in God. This was a rejection of the Eusebian view (traceable back to Origen) that the Father, Son and Spirit are three distinct *hypostases*. However, in attempting to put theological issues back on the agenda Marcellus had badly miscalculated: the emperor was interested in religious unity, not theological adequacy. Marcellus was condemned and, on the orders of Constantine, sent into exile.

In 339 Athanasius and Marcellus arrived independently of one another in Rome. There, Marcellus's mia-hypostatic theology was received sympathetically, partly on account of the fact that in Latin the word *hypostasis* was naturally translated as substance, and partly because in Roman theology there was already a Monarchian tendency to emphasize the unity of God. Pope Julius, bishop of Rome, supported Athanasius and Marcellus, and at a synod in 341 both were vindicated and their eastern opponents accused of being 'Arians'. However, the eastern bishops disputed Julius's authority in this matter, and met in the same year in Antioch, ostensibly for the purpose of dedicating a church. At the Dedication Synod the eastern bishops produced no fewer than four creeds. The last of these, the fourth Antiochene for-

mula, was selected to be presented by a small delegation to the western bishops in the hope that, by avoiding any reference to substances or *hypostases*, it would be accepted as a compromise statement. However, this attempt at reconciliation was unsuccessful. The following year an attempt to conduct an ecumenical council at Serdica failed because the eastern bishops refused to attend sessions at which Athanasius and Marcellus were present. Eventually the eastern bishops left and the western bishops produced their own document, the creed of Serdica, which adopted Marcellus's terminology of 'one *hypostasis*'.

By this time the Empire was ruled by two of Contantine's sons: Constans in the West and Constantius II in the East. During the remainder of the 340s bishops from both sides made some gestures towards compromise. Significant progress did not occur, however, until (3 years after the murder of Constans) Constantius II assumed sole rule of the Empire. Like his father, Constantius II sought the goal of bringing religious unity to the Empire. With his support, the eastern bishops had very much the upper hand. However, resistance to Nicaea and to Marcellus's theology proved to have been the bond that held the eastern position together. With those opponents now sidelined, the eastern grouping of theologies began to fragment. The first sign of this was the emergence in the 350s of the heteroousian position of Aetius and Eunomius (see §2.2.3). These heteroousians, or anhomoeans, argued that the Father and Son were different in substance. A counter position, the homoeousian view, held that just as humans (and animals) beget offspring that are *like* themselves, so the begotten Logos / Son must be like or similar in substance (*homoios kat'ousian*, or *homoiousia*) to the Father.

An alternative strategy for opposing the heteroousians, favoured by the emperor's court bishops, was to ban reference to *ousia, homoousia*, or *homoiousia* altogether. Ever hopeful of achieving a lasting agreement, Constantius brought the court bishops around the table with the homoeousians at Sirmium in 359, resulting in a formula now known as the 'Dated Creed' on account of its being dated 29 May 359. This creed, technically the fourth formula of Sirmium, was able to secure the assent of the disputants because it declared the Son to be like (*homoios*) the Father but included the clarification that although the term substance (*ousia*) should not in future be used of God, nevertheless the likeness of the Son to the Father obtained 'in every respect'. This compromise was acceptable to the homoeousians, who could take likeness 'in every respect' to include likeness of substance, and it satisfied the

court bishops by avoiding reference to *ousia* and its cognates. Constantius saw the Dated Creed as a possible focus for theological reconciliation between East and West, but he was anxious to avoid a repeat of the debacle at Serdica where an attempt to bring western and eastern bishops together had disastrously failed. He therefore summoned two separate synods, at Ariminum (Rimini) for the western bishops and at Seleucia for those of the East. Neither of the part-synods initially agreed to ratify the Dated Creed, but, after separate negotiations with the emperor's representatives, the eastern and western bishops eventually signed a creed in Constantinople on New Years Eve 359/360. This creed was similar to the Dated Creed, except that, crucially, the clarification that the likeness (*homoios*) was 'in every respect' was dropped, and the ban on speaking of God's *ousia* was extended to include a ban on the term *hypostasis*. It was a victory for the homoean position over that of the homoeousians: an end had been put to talk of God's essence or substance, and the imperial Church was united.

Of course the reality was that the key theological issues had been swept under the carpet. Less than 2 years later Constantius died and he was succeeded by his cousin, Julian. Julian had turned away from Christianity and sought to undermine the Church's fragile homoean peace by reinstating anti-homoean bishops who had been deposed. Athanasius returned to Alexandria and shrewdly began to attempt to invite reconciliation between homoousians and moderate homoeousians, in opposition to the homoean position. Athanasius offered these factions the common ground of condemnation of Arianism, recognition of the Nicene Creed, and acknowledgment of the divinity of the Holy Spirit. To facilitate this, he himself had to give up his allegiance to the western creed from the failed council at Serdica (342) because of its *mia-hypostatic* (one-*hypostasis*) interpretation of the Nicene Creed. For eastern theologians this Marcellus-influenced interpretation of Nicaea called the validity of the Nicene Creed into question. In addition, two clarifications of terminology greatly facilitated Athanasius's search for consensus. First, in the East, Basil of Caesarea developed the distinction between *ousia* and *hypostasis* (§2.4.1). Second, in the West, Pope Damascus showed how it was possible to be sensitive to the eastern terminological understanding by using the Latin *una essentia* (one essence) in place of the usual western phrase *una substantia* as the translation of the Greek one *ousia*, thus signaling a further way in which the language of hypostases and substances could be disentangled.

This turbulent period, during which the pro-Nicene or neo-Nicene consensus was assembled, was punctuated and influenced by rapid changes of political fortune including the deaths in quick succession of Julian and his successor Jovian and the subsequent splitting of the empire between the latter's sons, Valentinian in the West and Valens in the East. Valens adopted a policy of restoring the homoean imperial dogma. This had the effect of increasing the impetus for eastern theologians who opposed the homoean position to build bridges with the West. When Valens was killed in 378 in a war against the Goths his successor in the East, the then western Emperor Gratian (son of Valentinian) appointed a Spanish general, Theodosius, ruler in the East. Theodosius brought with him a western-influenced pro-Nicene perspective. In 381 he summoned a council at Constantinople. Although subsequently regarded as an ecumenical council (the second one, Nicaea being the first) it was in fact comprised almost exclusively of eastern bishops. Nevertheless, its decision to affirm the Nicene terminology according to which the Son is consubstantial (*homoousios*) with the Father provided the basis for rapid acceptance by, and reconciliation with, the West.[3]

This is the canonical story of the fluctuating fortunes of the concept of the *homoousion* of the Father and Son. The story culminates with the Council of Constantinople in 381, the outcome being victory for the terminology of *ousia* / substance. What is less often remarked is that the Niceno-Constantinopolitan Creed contains no reference to the Son as eternal *Logos* or the *image* of the invisible God. The standard accounts focus on the theological and political intrigues that led to the rise and fall and rise again of the *homoousion*. Can a complementary story be told about why, in the fall-out from the struggles over the terminology of God's 'substance', the inherently semiotic concepts of Word and image were lost? As I turn, then, from a story of substance to a story of significance, my narrative inevitably assumes a more tentative and hypothetical character. I offer the narrative less as an authoritative summary of the events than as an invitation to

---

[3] Important variations from the Nicene formula included dropping the Nicene reference to the Son having been begotten 'from the substance of the Father (perhaps because of a possible implication of the divisibility of God), the addition of the (anti-Marcellan) statement that the kingdom of Christ 'will have no end', and the expansion of affirmations about the Holy Spirit.

scholars to ask why fourth century Trinitarian theology allowed itself to become so little exercised by semiotic questions.

8.2   *Nicaea to Constantinople: Lateral View*

From a semiotic perspective the Arian crisis may be regarded as revolving around the metaphysical status of the Son as the 'image' of the Father.[4] Arius had argued that the fact that the Scriptures called the Son "the image of the invisible God" (Colossians 1.15) implied that the Son was inferior to the Father: an image is not isomorphic with its prototype.[5] Arius's bishop, Alexander of Alexandria, upholding the Alexandrian tradition of emphasis on the eternal generation of the Logos deriving from Clement and Origen, rejected this argument by pointing out that scripture held the Son to be "an eternal and exact image of the Father" (cf. Hebrews 1.3) and as such must share the same *physeis* (nature) as the Father.[6] In early 325 a synod took place in Antioch to elect a new bishop. The assembled bishops produced a statement that was intended to refute Arius's theses. Eusebius of Caesarea was one of three bishops who did not assent to this creed and who were consequently condemned by the synod. These bishops were, nevertheless, granted permission to justify themselves at another major synod originally planned for Ancyra but actually held at the imperial summer residence of Nicaea. Eusebius took the opportunity to present his own creed, in which he declared his faith in:

> One Lord Jesus Christ, the Logos of God, God from God, Light from Light, Life from Life, Only-begotten Son, firstborn of creation, before all ages begotten from the Father, by Whom also all things were made.[7]

Eusebius thus offered a phraseology that drew on John's Logos Christology (cf. John 1:1–5, 18), deliberately juxtaposing the idea of Christ as the eternal Word with the functionally subordinationist (though equally scriptural) identification of Jesus as the "firstborn of creation"

---

[4] My use of the terms 'standard view' and 'lateral view' for this and the preceding section is a medical reference to the importance, in some clinical circumstances, of performing radiographs from more than one angle in order to avoid misinterpreting radiological appearances seen from only one perspective.

[5] Tarmo Toom, *Classical Trinitarian Theology* (New York: T&T Clark, 2007), 82.

[6] Ibid., 86.

[7] Dünzl, *A Brief History*, 53.

(Colossians 1.15). Although not explicitly referred to in Eusebius's creed, it would be hard for that phrase not to conjure up also the immediately preceding affirmation of the hymn in the first chapter of Colossians, "He is the image of the invisible God".

The Council of Nicaea, including the emperor, approved Eusebius's creed as being 'right and good'. However, his formulation was open to an Arian reading and the Council eventually settled on a similar form of words which added the anti-Arian statements that the Son is begotten "from the substance (*ousia*) of the Father" and "true God from true God", and replaced the scriptural "firstborn of creation" with the unscriptural "begotten not made, consubstantial (*homoousios*) with the Father". Although this latter term would subsequently assume great importance as the fourth century debates developed, at the time it was not regarded as a particularly central amendment to Eusebius's creed; indeed the meaning of the word was far from clear. More importantly, and with far reaching consequences, Nicaea dropped Eusebius's explicit Logos Christology. Eusebius was later able to claim (possibly with some exaggeration) that the Nicene Creed was based closely on his own, but perhaps his later orchestration of a witch-hunt against supporters of Nicaea reflected a bitterness arising from his frustration at what had been excised in the process.

Significantly, it was not only those with subordinationist inclinations who saw the importance of the Logos concept. For example, Marcellus of Ancyra developed his notable mia-hypostatic theology in terms of a Logos Christology. Marcellus turned to the Stoic distinction between the word in the mind (*logos endiathetos*) and the uttered word (*logos prophorikos*), arguing that just as a word in a human mind cannot be distinguished from the mind that is thinking it, so the eternal Logos cannot be distinguished from the mind of the Father.[8] Hence the (not yet uttered) Word did not have a distinct *hypostasis* from that of the Father. Marcellus distinguished (in a way generally regarded as orthodox) between the pre-existent Logos and the Word incarnated in the Son. Eusebius of Caesarea regarded Marcellus's denial of the distinct hypostasis of the pre-existent Son as resting on the assumption that the Son was a 'mere word' (*psilos logos*). Eusebius pointed out that Scripture does not say that the Son was "in God" (like a word in the

---

[8] Toom, *Classical Trinitarian Theology*, 98.

mind) but that he was "with God" (John 1:1).[9] Furthermore, Eusebius rejected the Nicene view that the Son is begotten "from the substance of the Father" on the grounds that as the "image" of the Father (cf. Colossians 1.15) the Son received his divinity from the Father.[10] At this stage in the debate, then, we see two of the great fourth century theologians allowing their arguments to hinge on implicitly semiotic issues. Eventually the Stoic mind / word analogy was rejected in the anathemas of the First Sirmian Creed (351) on the grounds that it implied that the Word was not distinct from the Father until it was uttered, and that it ceased to be distinct once the utterance (sound) was over.[11] The now-familiar words of the Niceno-Constantinopolitan Creed, "whose kingdom shall have no end", one of the phrases added to the Nicene Creed by the Council of Constantinople, are an echo of opposition to Marcellus's idea that the Son / Word had no distinct hypostasis apart from the (earthly) duration of his utterance.[12]

Although the Nicene Creed omitted any reference to Christ as the Logos or image of God the Council of Nicaea was not, at the time, regarded as having any binding authority.[13] Other creedal formulae continued to employ scripturally based semiotic concepts. At the Dedication Synod, the East's response to Pope Julius's attempt to secure the rehabilitation of Athanasius and Marcellus, the most theologically significant of the four creeds produced was the second Antiochene formula. This referred to Christ as:

> God from God,…Living Logos, Living Wisdom…; unchanged image of the substance [*ousia*] of the Godhead…; the firstborn of all creation, who was in the beginning with God, God Logos…, by whom all things were made, and in whom all things exist.

This second Antiochene formula is shot through with scriptural allusions, affirming Christ as the Logos and image of God in a text that was rich and subtle enough to fix the eastern position for a long time.[14] However, when choosing a creed to present to the West in the hope of

---

[9] Ibid., 101.

[10] Ibid., 101–02.

[11] Ibid., 99.

[12] Gerald O'Collins, *The Tripersonal God: Understanding and Interpreting the Trinity* (London: Geoffrey Chapman, 1999), 123.

[13] Lewis Ayres, *Nicaea and Its Legacy: An Approach to Fourth-Century Trinitarian Theology* (Oxford: Oxford University Press, 2004), 100.

[14] Dünzl, *A Brief History*, 76–77.

achieving a compromise the eastern bishops chose, instead, the insipid fourth Antiochene formula. As Dünzl puts it, in contrast to the second formula the fourth formula "passed over both the doctrine of the three hypostases and the eastern image-theology so as not to give new occasion for dispute".[15]

A year later, when ecumenical discussions in Serdica broke down, the eastern bishops composed a text justifying their departure. In this text they referred to the anodyne fourth Antiochene formula, not the bolder (implicitly semiotic) second formula. In doing so they perhaps implicitly recognized the difficulty they would face in convincing the West that a robust three-hypostasis, image-based, formula could give an adequate non-subordinationist account of the unity of God. The western bishops who were left behind at Serdica composed their own document, which set out a one-hypostasis position clearly influenced by Marcellus. The difficulty faced by the western bishops was that of showing how such a view avoids modalism. One strategy that they resorted to in the encyclical they produced at Serdica was to suggest that when, for example, Jesus says that "the Father is greater than I" (John 14:28) it is the *name* of the Father, not a distinction of hypostasis, that distinguishes it as greater than that of the Son. As Dünzl puts it, this shows up a serious defect in the theology of the West: basing the distinction between Father, Son and Spirit merely on the 'names' appears to indicate that "they do not have another category at their disposal".[16]

In the mid-fourth-century, then, neither the western or eastern theological positions were irrevocably fixed. Both positions contained something of what would subsequently come to be regarded as orthodox, and each side was willing to consider some kind of rapprochement with the other. The eastern bishops held a conviction about the image-based (semiotic) relation between Father and Son, but, lacking an adequate metaphysic through which to express this, they retreated to what they regarded as a compromise position (based on the fourth Antiochene formula) that was, in fact, ultimately unattractive to either side. The western bishops, on the other hand, were working with a theologically problematic one-hypostasis doctrine. In seeking to accommodate this to eastern sensibilities they resorted to an implicitly

---

[15] Ibid., 77.
[16] Ibid., 83.

semiotic but incipiently nominalistic solution. When East and West failed to enter into dialogue with one another at Serdica perhaps the last chance of working towards a solution that would have incorporated the best insights of both sides passed by. With it, I tentatively suggest, may have gone the last opportunity for an ecumenical creed that would have incorporated the scripturally based semiotic (Logos / image) Christological tradition.

As it was, when Emperor Constans, instigator of the failed imperial council at Serdica, was murdered and eventually succeeded by his brother Constantius II, the western position was sidelined and the eastern approach began to fragment. When, at a synod at Sirmium in 357, Constantius and his court bishops attempted to counter the emergence of the *heteroousians* by banning all reference to the *ousia* / substance of God they also elected to avoid any reference to the Logos or the 'image' of God.[17] The victory of the homoean position on New Years Eve 359/360 represented a temporary eclipse of substance-language in Trinitarian theology. When that language re-emerged through Athanasius's efforts to secure compromise and reconciliation between the homoousians and homoeousians it did so unaccompanied by any conceptually active understanding of the Son as image of the Father. The assembling and eventual triumph of the neo-Nicene forces was achieved at the cost of repeating the Nicene Creed's avoidance of the scripturally sound but ontologically suspect language of Word or image.

In retrospect this outcome is probably not surprising. From the beginnings of Christian theological reflection, Logos Christologies had appeared inherently subordinationist. The second century apologists generally regarded the Word as having been generated at the time of creation.[18] Even Origen, who argued for the eternal generation of the Son, is usually presented (somewhat unfairly) as holding to a subordinationist view of the Logos.[19] In fact as LaCugna points out, until Nicaea a form of subordinationism was the orthodox position, a position which was grounded in the scriptural witness to the economy

---

[17] Ibid., 93.
[18] Rowan Williams, *Arius: Heresy and Tradition*, 2nd ed. (London: SCM Press, 2001), 127.
[19] Ibid., 138.

of salvation: the Son who is sent is inferior to the Father who sends.[20] Likewise, the Word who is uttered would naturally have been held to be inferior to the Father who utters. It was the Arian crisis that made it necessary for theologians to articulate how the apparent subordinationism implicit in the economy of salvation does not imply subordinationism at the ontological level of the intra-Trinitarian relations.[21] Without the resources of a fully developed metaphysical semiotics it is perhaps not surprising that, in the Nicene Creed, the apparently subordinationist Logos Christology was dropped. The subsequent debates that led up to the Council of Chalcedon (451) admittedly revolved around the question of the relationship between the divine Word and the human person of Jesus,[22] and the confession of faith agreed at Chalcedon referred to the person of Christ as "one and the same Son, only-begotten, divine Word".[23] However, although the settlement reached at Chalcedon retained Word as a Christological *title*, the formula "two natures, one person" does not draw on the metaphor of the uttered word to explain how the human and divine natures can co-exist in one person. As Dunn remarks, after Nicaea "Logos" was generally replaced by "Son" as the standard title for Jesus in Christian thought.[24] Ultimately the resolution to the debates triggered by Arianism had required a rejection of any suggestion of subordinationism, and the price paid had been the effective abandonment of John's beautiful and powerful Logos Christology.

It is often said that the allegedly substance-based ontology of Nicaea, Constantinople and Chalcedon left a troublesome metaphysical legacy. Whether the language of *ousia* / substance is necessarily as problematic as its critics allege is debatable.[25] After all, the term *homoousion* might simply be taken to mark the distinction between the created and the uncreated orders, without buying into any particular metaphysical stance on 'substance' (cf. §2.2.2). Perhaps the real problem is that

---

[20] Catherine Mowry LaCugna, *God for Us: The Trinity and Christian Life* (San Francisco: Harper Collins, 1991), 23.

[21] Ibid., 30.

[22] J. N. D. Kelly, *Early Christian Doctrines*, 5th ed. (London: A & C Black, 1977), 280–309.

[23] Ibid., 340.

[24] James D. G. Dunn, *Christology in the Making: A New Testament Inquiry into the Origins of the Doctrine of the Incarnation*, 2nd ed. (London: SCM Press, 1989), 214.

[25] William P. Alston, "Substance and the Trinity," in *The Trinity*, ed. Stephen T. Davis, Daniel Kendall, and Gerald O'Collins (Oxford: Oxford University Press, 1999).

the price of affirming the ontological equality of Father and Son by means of such language was the abandonment of the scripturally warranted search for a coherent semiotic theological metaphysics. In this perspective perhaps, for example, the failure of the imperial Council of Serdica in 342 might be regarded as having been a result of the absence of the metaphysical semiotics that would have been needed to resolve the philosophical problems that divided the two sides, rather than simply the intransigence of either of the parties. Which leads me to wonder, might things have turned out differently if the Fathers had known Peirce?

8.3 *Credo*

Let us go back to the year 342. The western emperor, Constans, has put pressure on his brother, Constantius, ruler of the East, to organize a major Council on the model of that initiated by their father at Nicaea. Constantius has agreed to the enterprise, largely because he is at war with the Persians in the East and cannot afford to lose the military support of his brother. In the autumn of that year the Council convenes at Serdica (now known as Sofia, in Bulgaria). However the eastern bishops refuse to take part in sessions at which Athanasius and Marcellus are present, and when news arrives of the defeat of the Persians, Constantius no longer has any reason to persuade the delegates from the East to stay. Their departure will signal the failure of the Council of Serdica, perhaps the last chance for theology rather than politics to determine the content of the definitive ecumenical creed. This much is historically well attested. Let us re-narrate the story from here a final time…

…At this point in the story the Trinitarian debate took a crucial turn. With the eastern bishops on the point of departure further news arrived that the announcement of the defeat of the Persians had been premature. With the war continuing, Constantius still needed the support of his brother and persuaded his bishops to remain in Serdica. The Council proceeded as originally planned, facilitated by a further unexpected turn of events. It seems that the impasse between the western and eastern bishops was resolved as a result of the influence of a philosopher-theologian from the empire of the New World. Unfortunately the philosopher's name has not been passed down to us; he has become

known to historians of doctrine as the New World Pragmatist. It seems fairly certain that this shadowy figure, not himself being a bishop, did not personally attend the sessions of the Council. His influence seems to have been exerted by gaining the ear of one of the western delegates. Some have suggested that the bishop in question may have been Hilary of Poitiers, but the evidence is very circumstantial.

The decisive contribution made by the New World Pragmatist was to bring to the table an alternative to the ontologies of essence and substance to which the theological debates were beginning to become tied. The Pragmatist brought from the New World a metaphysic of meaning; a metaphysical perspective in which word, image, and representation were understood to be fundamental ontological categories. In retrospect we can see that this contribution was the third key element in the recipe required for a coherent Trinitarian philosophy. As Zizioulas has pointed out, the first two of these ingredients were the Greek emphasis on fundamental ontology and the Hebrew understanding of personal freedom.[26] If these had been the only two ingredients in the mix we may speculate – though it hardly bears thinking – that Trinitarian theology might have had difficulty in doing justice to the primary Christian conviction that the human person of Jesus of Nazareth was the incarnation of the eternal Word of the Father, the image of the invisible God. What the Pragmatist brought to the table was a sophisticated philosophy of signs, a semiotic theory in which, crucially, representation and interpretation were not held to be purely human constructs, but were seen to be deeply embedded in the whole order of creation.

Just as we can trace the Greek emphasis on fundamental ontology to the particular milieu of Hellenistic culture, and the Hebrew understanding of human freedom to the Jewish experience of exile and return, oppression and release, so we can see that the Pragmatist's philosophy arose out of the particular social and historical experience of the New World settlers. (How different the history of philosophy might have been if the 'discovery' of the Americas had been delayed by even a few centuries!)[27] Making a new start in this vast natural

---

[26] John D. Zizioulas, *Being and Communion: Studies in Personhood and the Church* (Crestwood, NY: St Vladimir's Seminary Press, 1985), 35.

[27] See Robert Cummings Neville, *The Highroad around Modernism* (New York: State University of New York Press, 1992), 169–70, for observations about the special character of American philosophy.

wilderness, these courageous and practical pioneers had, not surprisingly, come to reflect on the nature of 'natural' signs: how to track deer from their hoof-prints; how to distinguish brown and black bears from their scat; how to predict tomorrow's weather in an unforgiving climate. Indeed, the indigenous peoples whom the settlers displaced were, for the same reasons, already attuned to nature's saturation with significance.

In addition to the New World's pansemiotic perspective, the Pragmatist brought to Serdica an extraordinary grasp of the relation between metaphysics and logic. Specifically, it appears that the Pragmatist persuaded the Council to reconsider Marcellus's Logos-based mia-hypostatic (one-hypostasis) scheme. Marcellus had raged against Origen's three-hypostasis doctrine on the grounds that "It is impossible that three hypostases can unite…in one monad!".[28] Instead, Marcellus had envisaged that "The Monad spreads into a triad, but without ever suffering separation". Marcellus had appropriated this idea from neo-Pythagorean mathematics.[29] The neo-Pythagoreans, who influenced the neo-Platonism of the third century, had been pursuing Pythagorus's (sixth century BCE) investigations of mathematics and harmony. In their investigations of the relation between number and geometry they suggested that the number one corresponds to a single indivisible point without extension. The number two corresponds to an extension of the point into a line, and the number three is instantiated geometrically not by extending the line but by broadening it from one end, making a triangle. The triangle thus arises from, and is in a sense contained within, the point. In other words, Threeness is always implicit in, and capable of returning to, Singularity.

Marcellus understood the Logos to emerge from the Father, appearing outwardly in creation, and ultimately returning to the Father. Although Marcellus was accused of Sabellianism this was not an entirely accurate charge since he understood the divine monad itself to be a differentiated unity – simultaneously Father, Son and Holy Spirit – whereas Sabellians understood these three to be successive modes of God's existence. The Pragmatist's contribution was to persuade the assembled bishops, perhaps via the mediation of Hilary of Poitiers, that Marcellus's mathematical-logical scheme offered the basis of precisely

---

[28] Quoted in Dünzl, *A Brief History*, 66.
[29] Ibid., 67.

the kind of metaphysic required as an ontological grounding for representation and interpretation (including the scriptural witness to Jesus as the image and Word of the Father). The eastern bishops' concern that talk of one-hypostasis threatened to obscure the real distinctness of Father, Son, and Spirit was thus defused, since the ontological originality of Marcellus's scheme was now seen to lie in the way in which it leant itself to a metaphysical semiotics of just the kind required for a coherent theological formulation of Christian belief. The unity of the triune God could be affirmed by reference to the triadic logic of what the Pragmatist referred to as ceno-Pythagorean mathematics,[30] rather than in the vagaries of translation of various terms for essence and substance between Greek and Latin, by which the debates were in danger of becoming distracted. Furthermore, the western bishops could now be persuaded that the eastern image-language was not, as they had feared, implicitly subordinationst. For the first time the riches of the Johannine Logos Christology could be celebrated without raising the spectre of Arianism. The way was now open to formulate a synthesis of Marcellus's logic with the kind of scripturally based understanding of the relation between Father, Son and Spirit that Eusebius of Caesarea had originally (unsuccessfully) presented to the Council of Nicaea in 325.

We can only speculate about what would have happened if the Fathers had not come to know of the Pragmatist and the tradition that he brought from the empire of the New World. Of the bishops gathered at Serdica, Marcellus is recognized to have been the outstanding theologian, even above Athanasius.[31] If it had not been for the influence of the Pragmatist, however, Marcellus might perhaps now be remembered as a quasi-Sabellian heretic. More importantly, it seems unlikely that, in the absence of a robust metaphysical basis on which to understand the implicitly semiotic witness of scripture, the Logos / image concepts would have survived much longer in the fiercely political crucible of fourth century Trinitarian theology. Some have even speculated (perhaps unfairly) that, if it had not been for the Pragmatist's serendipitous contribution, an eventual settlement of the Trinitarian problem might have ended up depending more on diplomacy than philosophy (Athanasius might have had the qualifications

---

[30] Cornelis de Waal, *On Peirce* (Belmont: Wadsworth, 2001), 11.
[31] Dünzl, *A Brief History*, 84.

for such an undertaking), with the Creed of Nicaea potentially offering the basis of some kind of compromise. But, as we have already seen, the Nicene Creed had itself sacrificed the beauty and power of John's Logos Christology for the sake of avoiding a (spurious) suspicion that understanding the Trinitarian relations within a semiotic framework would inevitably lead to subordinationism. Fortunately, these disconcerting speculations can remain the stuff of historical fiction. In reality, to cut a long story short, the result of the indirect intervention of the New World Pragmatist was the now familiar Ecumenical Creed of Serdica (see below). Alongside it, for comparison, I offer a speculation about how the formula produced at Nicaea in 325 might subsequently have been developed had proceedings at Serdica not taken the turn outlined above.[32]

A final word on terminology is in order. Technically, as just indicated, the Creed reproduced below is known as the Ecumenical Creed of Serdica. Informally, of course, we all know it as the Persian Creed. Most scholars have accepted the account, apparently derived from a letter written by Hilary of Poitiers (unfortunately now lost), in which the bishop is alleged to have humorously suggested this nomenclature on the basis that, if it were not for the unexpected resurgence of the Persians, the eastern bishops would have deserted the Council before it had even begun. However, an alternative tradition should be mentioned, according to which the label 'Persian' is thought to refer to the Pragmatist himself. If so, it may be the only surviving clue to the name of that great philosopher of the New World.[33]

---

[32] The Archbishop's Council, *Common Worship: Services and Prayers for the Church of England* (London: Church House Publishing, 2000).

[33] C. S. Peirce's family were descended from John Pers (pronounced 'purse'), a weaver from Norwich. Pers emigrated from England in 1637 and settled in Watertown, Massachusetts. Joseph Brent, *Charles Sanders Peirce: A Life*, Revised and Enlarged Edition (Bloomington: Indiana University Press, 1998), 29.

The 'Persian' Creed

We believe in one God,
the Father, the Almighty,
unbegotten, unoriginate,
maker of heaven and earth,
ground of all beauty and quality,
ingenerate source of all that is,
seen and unseen.

We believe in one Lord, Jesus Christ,
The only begotten Son of God,
eternally uttered Word of the Father,
who is with God and who is God,
begotten not made,
spoken not created,
image of the invisible God,
radiance of God's glory
and exact imprint of God's very being;
ground of all otherness,
through whom all things were made.

For us and for our salvation
he came down from heaven,
was incarnate from the Holy Spirit
and the Virgin Mary
and was made man.
For our sake he was crucified
under Pontius Pilate;
he suffered death and was buried.
On the third day he rose again
in accordance with the Scriptures;
he ascended into heaven
and is seated at the right hand of the Father.
He will come again in glory
to judge the living and the dead,
and his kingdom will have no end.

We believe in the Holy Spirit,
the Lord, the giver of life,
who is the gift of the Father through the Son,
who breathes meaning into the Word
and gives significance to the image,
who has spoken through the prophets,
who with the Father and the Son
is worshipped and glorified
as the ground of all wisdom and love.

We believe in one holy catholic
and apostolic Church.
We acknowledge one baptism
for the forgiveness of sins.
We look for the resurrection of the dead,
and the life of the world to come. Amen.

The 'Nicene' Creed (speculatively modified)

We believe in one God
the Father, the Almighty,
maker of heaven and earth,
of all that is,
seen and unseen.

We believe in one Lord, Jesus Christ,
the only Son of God,
eternally begotten of the Father,
God from God, Light from Light,
true God from true God,
begotten, not made,
of one Being [homoousion] with the Father;
through him all things were made.

For us and for our salvation
he came down from heaven,
was incarnate from the Holy Spirit
and the Virgin Mary
and was made man.
For our sake he was crucified
under Pontius Pilate;
he suffered death and was buried.
On the third day he rose again
in accordance with the Scriptures;
he ascended into heaven
and is seated at the right hand of the Father.
He will come again in glory
to judge the living and the dead,
and his kingdom will have no end.

We believe in the Holy Spirit,
the Lord, the giver of life,
who proceeds from the Father and the Son,
who with the Father and Son
is worshipped and glorified,
who has spoken though the prophets.

We believe in one holy catholic
and apostolic Church.
We acknowledge one baptism
for the forgiveness of sins.
We look for the resurrection of the dead,
and the life of the world to come. Amen.

BIBLIOGRAPHY

Alston, William P. "Substance and the Trinity." In *The Trinity*, edited by Stephen T. Davis, Daniel Kendall and Gerald O'Collins, 179–201. Oxford: Oxford University Press, 1999.

Anderson, M., J. Deely, M. Krampen, J. Ransdell, T. Sebeok, and T. Von Uexkull. "A Semiotic Perspective on the Sciences: Steps toward a New Paradigm." *Semiotica* 52, no. 1/2 (1984): 4–47.

Aquinas, Thomas. *The Summa Theologica of Thomas Aquinas*. 22 vols. London: Burns, Oates and Washbourne, 1920–1924.

Ariew, André, Robert Cummins, and Mark Perlman, eds. *Functions: New Essays in the Philosophy of Psychology and Biology*. Oxford: Oxford University Press, 2002.

Arndt, William F., and F. Wilbur Gringrich. *A Greek-English Lexicon of the New Testament and Other Early Christian Literature: A Translation and Adaptation of Walter Bauer's Griechisch-Deutsches Wörterbuch Zu Den Schriften Des Neuen Testaments Und Der Übrigen Urchristlichen Literatur*. 4th revised and augmented edition, Chicago: University of Chicago Press, 1952.

Athanasius. *Select Writings and Letters of Athanasius, Bishop of Alexandria*, Edited, with Prolegomena, Indices and Tables by Archibald Robertson, in Philip Schaff and Henry Wace, eds. *A Select Library of Nicene and Post-Nicene Fathers of the Christian Church*, Volume 4. Grand Rapids: Wm. B Eerdmans, 1891.

Augustine. *The Trinity*. Translated by Edmund Hill; Part I, Volume 5 of *The Works of Saint Augustine: A Translation for the 21st Century*, edited by John E. Rotelle, New York: New City Press, 1991.

Avis, Paul. *God and the Creative Imagination: Metaphor, Symbol and Myth in Religion and Theology*. London and New York: Routledge, 1999.

Ayres, Lewis. *Nicaea and Its Legacy: An Approach to Fourth-Century Trinitarian Theology*. Oxford: Oxford University Press, 2004.

Baillie, D. M. *God Was in Christ: An Essay on Incarnation and Atonement* London: Faber and Faber, 1948.

Balter, Michael. "From a Modern Human's Brow – or Doodling?" *Science* 295 (2002): 247–49.

Balthasar, Hans Urs von. *Theo-Drama Volume 3: Dramatis Personae: The Person in Christ*. San Francisco: Ignatius, 1992.

Barbieri, Marcello. *The Organic Codes: An Introduction to Semantic Biology*. Cambridge: Cambridge University Press, 2003.

Barnes, Michel. "Augustine in Contemporary Trinitarian Theology." *Theological Studies* 56 (1995): 237–50.

Barth, Karl. *Church Dogmatics*. Vol. 2, Part 1. Edited by G. W. Bromiley and T. F. Torrance. Edinburgh: T&T Clark, 1957.

——. *Church Dogmatics*. Vol. 4, Part 3 (first half). Edited by G. W. Bromiley and T. F. Torrance. Edinburgh: T&T Clark, 1961.

——. *The Doctrine of the Word of God (Prolegomena to Church Dogmatics)*. Translated by G. T. Thomson. Vol. 1, Part 1. Edinburgh: T&T Clark, 1936.

Bergson, Henri. *Creative Evolution*. Translated by Arthur Mitchell. London: Mcmillan, 1911.

Brent, Joseph. *Charles Sanders Peirce: A Life*. Revised and Enlarged ed. Bloomington: Indiana University Press, 1998.

British Council of Churches. *The Forgotten Trinity, Volume 1, the Report of the British Council of Churches Study Commission on Trinitarian Doctrine Today*. London: British Council of Churches, 1989.

Brooke, John, and Geoffrey Cantor. *Reconstructing Nature: The Engagement of Science and Religion*. Edinburgh: T&T Clark, 1998.

Brooke, John Hedley. *Science and Religion: Some Historical Perspectives*. Cambridge: Cambridge University Press, 1991.

Brooks, Daniel R., and E. O. Wiley. *Evolution as Entropy: Toward a Unified Theory of Biology*. 2nd ed. Chicago: University of Chicago Press, 1988.

Brown, David. *God and Mystery in Words: Experience through Metaphor and Drama*. Oxford: Oxford University Press, 2008.

——. "Symbolism." In *The Oxford Companion to Christian Thought*, edited by Adrian Hastings, Alistair Mason and Hugh Pyper, 690–92. Oxford: Oxford University Press, 2000.

Brueggemann, Walter, Sharon Parks, and Thomas H. Groome, eds. *To Act Justly, Love Tenderly, Walk Humbly: An Agenda for Ministers*. Eugene: Wipf and Stock, 1997.

Buch-Hansen, Gitte. *It is the Spirit that Gives Life: A Stoic Understanding of Pneuma in John's Gospel.* Berlin: Walter de Gruyter, 2010.

Burrows, Ruth. *Guidelines for Mystical Prayer*. London: Sheed and Ward, 1976.

Cassirer, Ernst. *An Essay on Man: An Introduction to a Philosophy of Human Culture*. 1944; Hamberg: Meiner Verlag, 2006.

Catchpole, David. *Jesus People: The Historical Jesus and the Beginnings of Community*. London: Darton, Longman, Todd, 2006.

Cilliers, Paul. *Complexity and Postmodernism: Understanding Complex Systems*. London: Routledge, 1998.

Clayton, Philip, and Paul Davies, eds. *The Re-Emergence of Emergence: The Emergentist Hypothesis from Science to Religion*. Oxford: Oxford University Press, 2006.

Coakley, Sarah. "'Persons' in the 'Social' Doctrine of the Trinity: A Critique of Current Analytical Discussion." In *The Trinity*, edited by Stephen T. Davis, Daniel Kendall and Gerald O'Collins, 123–44. Oxford: Oxford University Press, 1999.

Colapietro, Vincent M. *Peirce's Approach to the Self: A Semiotic Perspective on Human Subjectivity*. New York: State University of New York Press, 1989.

Conway Morris, Simon. *The Crucible of Creation*. Oxford: Oxford University Press, 1998.

Corrington, Robert S. *An Introduction to C. S. Peirce: Philosopher, Semiotician and Ecstatic Naturalist*. Lanham: Rowman and Littlefield, 1993.

——. "Regnant Signs: The Semiosis of Liturgy." *Semiotica* 117, no. 1 (1997): 19–42.

Cottingham, John. *Philosophy and the Good Life: Reason and the Passions in Greek, Cartesian and Psychoanalytic Ethics*. Cambridge: Cambridge University Press, 1998.

Crisp, Oliver D. *Divinity and Humanity: The Incarnation Reconsidered*. Cambridge: Cambridge University Press, 2007.

Cross, F. L., and E. A. Livingstone. *The Oxford Dictionary of the Christian Church*. 3rd ed. Oxford: Oxford University Press, 1997.

Crutchfield, James P., J. Doyne Farmer, Norman H. Packard, and Robert S. Shaw. "Chaos." In *Chaos and Complexity: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Nancy Murphy and Arthur R. Peacocke, 35–48. Vatican City / Berkeley: Vatican Observatory / Center for Theology and the Natural Sciences, 1995.

Cunningham, David S. *These Three Are One: The Practice of Trinitarian Theology*. Oxford: Blackwell, 1998.

Cupitt, Don. *Creation out of Nothing*. London: SCM, 1990.

Daley, Andrew J., Andrew Girvin, Stuart A. Kauffman, Peter R. Wills, and Daniel Yamins. "Simulation of a Chemical Autonomous Agent." *Zeitschrift für Physikalische Chemie* 216 (2002): 41–49.

Darwin, Charles. "Darwin's Notebooks on Transmutation of Species, Part I. First Notebook (July 1837–February 1838), Edited with an Introduction and Notes by Sir Gavin De Beer." *Bulletin of the British Museum (Natural History)* 2, no. 2 (1960).

——. *The Origin of Species by Means of Natural Selection or the Preservation of Favored Races in the Struggle for Life*. 1859, reprinted New York: The Modern Library, 1993.

——. *The Origin of Species by Means of Natural Selection or the Preservation of Favoured Races in the Struggle for Life*. London: John Murray, 1859.

Davidson, Iain. "The Power of Pictures." In *Beyond Art: Pleistocene Image and Symbol*, edited by Margaret W. Conkey, Olga Soffer, Deborah Stratmann and Nina G. Jablonski, 125–59. San Francisco: California Academy of Sciences, 1997.

Dawkins, Richard. *The Blind Watchmaker*. London: Longmans, 1986.

——. "Universal Darwinism." In *Evolution from Molecules to Men*, edited by D. S. Bendall, 403–25. Cambridge: Cambridge University Press, 1983.

De Duve, Christian. *Vital Dust: The Origin and Evolution of Life on Earth*. New York: Basic Books, 1995.

de Waal, Cornelis. *On Peirce*. Belmont: Wadsworth, 2001.

Deacon, Terrence W. *The Symbolic Species*. Harmondsworth: Penguin, 1997.

——. "Emergence: The Hole at the Wheel's Hub." In *The Re-Emergence of Emergence: The Emergentist Hypothesis from Science to Religion*, edited by Philip Clayton and Paul Davies, 111–50. Oxford: Oxford University Press, 2006.

——. "Reciprocal Linkage between Self-Organizing Processes Is Sufficient for Self-Reproduction and Evolvability." *Biological Theory* 1, no. 2 (2006): 136–49.

——. "The Aesthetic Faculty." In *The Artful Mind: Cognitive Science and the Riddle of Human Creativity*, edited by Mark Turner, 21–71. Oxford: Oxford University Press, 2006.

Deamer, D. W. "The First Living Systems: A Bioenergetic Perspective." *Microbiology and Molecular Biology Reviews*, June (1997): 237–61.

Deane-Drummond, Celia E. *Creation through Wisdom: Theology and the New Biology*. Edinburgh: T&T Clark, 2000.

Deely, John. "Semiotics and Biosemiotics: Are Sign-Science and Life Science Coextensive?" In *Biosemiotics: The Semiotic Web 1991*, edited by T. A. Sebeok and J. Umiker-Sebeok, 45–75. Berlin: Mouton de Gruyter, 1992.

Del Colle, Ralph. "The Triune God." In *The Cambridge Companion to Christian Doctrine*, edited by Colin E. Gunton, 121–40. Cambridge: Cambridge University Press, 1997.

Deledalle, Gérard. *Charles S. Peirce's Philosophy of Signs: Essays in Comparative Semiotics*. Bloomington: Indiana University Press, 2000.

Dennett, Daniel C. *Darwin's Dangerous Idea: Evolution and the Meanings of Life*. Harmondsworth: Penguin, 1995.

Depew, David J., and Bruce H. Weber. *Darwinism Evolving: Systems Dynamics and the Genealogy of Natural Selection*. Cambridge: MIT Press, 1995.

——. *Evolution at a Crossroads: The New Biology and the New Philosophy of Science*. Cambridge: MIT Press, 1985.

Derrida, Jacques. *Of Grammatology*. Translated by G. C. Spivak. Baltimore: Johns Hopkins University Press, 1976.

Donald, Merlin. *Origins of the Modern Mind: Three Stages in the Evolution of Culture and Cognition*. Cambridge: Harvard University Press, 1991.

Drees, Willem B. "Gaps for God?" In *Chaos and Complexity: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Nancy Murphy and Arthur R. Peacocke, 223–37. Vatican City / Berkeley: Vatican Observatory / Center for Theology and the Natural Sciences, 1995.

——. *Religion, Science and Naturalism*. Cambridge: Cambridge University Press, 1996.

Dretske, Fred. *Knowledge and the Flow of Information*. Oxford: Blackwell, 1981.

Dunn, James D. G. *Christology in the Making: A New Testament Inquiry into the Origins of the Doctrine of the Incarnation*. 2nd ed. London: SCM Press, 1989.

Dünzl, Franz. *A Brief History of the Doctrine of the Trinity in the Early Church*. London: T&T Clark, 2007.

Dupré, John. *The Disorder of Things: Metaphysical Foundations of the Disunity of Science*. Cambridge: Harvard University Press, 1993.

Eder, J., and H. Rembold. "Biosemiotics – a Paradigm of Biology." *Naturwissenschaften* 79 (1992): 60–67.

Eldridge, Niles, and S. J. Gould. "Punctuated Equilibria: An Alternative to Phyletic Gradualism." In *Models in Paleobiology*, edited by T. J. M. Schopf, 82–115. San Francisco: Freeman, Cooper, 1972.

Emmeche, Claus, and Jesper Hoffmeyer. "From Language to Nature: The Semiotic Metaphor in Biology." *Semiotica* 84, no. 1/2 (1991): 1–42.

Enard, Wolfgang, Molly Przeworski, Simon E. Fisher, Celia S. L. Lai, Victor Wiebe, Takishi Kitano, Anthony P. Monaco, and Svante Pääbo. "Molecular Evolution of *FOXP2*, a Gene Involved in Speech and Language." *Nature* 418 (2002): 869–72.

Engberg-Pedersen, Troels. *Paul and the Stoics*. Louisville: Westminster John Knox, 2000.

Evans, Ernest. *Tertullian's Treatise against Praxeus*. London: SPCK, 1948.

Fauconnier, Giles, and Mark Turner. *The Way We Think: Conceptual Blending and the Mind's Hidden Complexities*. New York: Basic Books, 2002.

Fergusson, David. "Creation." In *The Oxford Handbook of Systematic Theology*, edited by John Webster, Kathryn Tanner and Iain Torrance, 72–90. Oxford: Oxford University Press, 2007.

——. *Faith and Its Critics: A Conversation*. Oxford: Oxford University Press, 2009.

Fields, Stephen M. *Being as Symbol: On the Origins and Development of Karl Rahner's Metaphysics*. Washington D.C.: Georgetown University Press, 2000.

Fodor, Jerry A. *The Modularity of Mind*. Cambridge: MIT Press, 1983.

——. *A Theory of Content and Other Essays*. Cambridge: MIT Press, 1990.

Ford, David F. *Self and Salvation: Being Transformed*. Cambridge: Cambridge University Press, 1999.

Foster, M. B. "The Christian Doctrine of Creation and the Rise of Modern Science." *Mind* 43 (1934): 446–68.

——. "Christian Theology and Modern Science of Nature (I)." *Mind* 44 (1935): 439–66.

——. "Christian Theology and Modern Science of Nature (II)." *Mind* 45 (1936): 1–27.

Fowl, Stephen E. "The Gospels and 'the Historical Jesus'." In *The Cambridge Companion to the Gospels*, edited by Stephen C. Barton, 76–96. Cambridge: Cambridge University Press, 2006.

Gelpi, Donald L. *The Divine Mother: A Trinitarian Theology of the Holy Spirit*. Lanham, MD: University Press of America, 1984.

——. *The Gracing of Human Experience: Rethinking the Relationship between Nature and Grace*. Collegeville, Minnesota: The Liturgical Press, 2001.

——. "A Peircean Approach to Trinity as Community: A Response to Some Responses." *Horizons* 27, no. 1 (2000): 114–30.

Gilkey, Langdon. "The God of Nature." In *Chaos and Complexity: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Nancy Murphy and Arthur R. Peacocke, 211–20. Vatican City / Berkeley: Vatican Observatory / Center for Theology and the Natural Sciences, 1995.

Gleick, James. *Chaos: Making a New Science*. London: Heinemann, 1988.

Goodwin, Brian. *How the Leopard Changed Its Spots*. London: Phoenix, 1995.

Gould, Stephen Jay. *Wonderful Life: The Burgess Shale and the Nature of History*. Harmondsworth: Penguin, 1991.

Gratzer, Walter. *Eurekas and Euphorias: The Oxford Book of Scientific Anecdotes*. Oxford: Oxford University Press, 2004.

Green, Joel B. "The Gospel According to Mark." In *The Cambridge Companion to the Gospels*, edited by Stephen C. Barton, 139–57. Cambridge: Cambridge University Press, 2006.

Greene, Colin J. D. *Christology in Cultural Perspective: Marking out the Horizons*. Grand Rapids: William B. Eerdmans, 2003.

Gregersen, Niels Henrik. "God, Matter, and Information: Towards a Stoicizing Logos Christology." In *Information and the Nature of Reality: From Physics to Metaphysics*, edited by Niels Henrik Gregersen and Paul Davies. Cambridge: Cambridge University Press, 2010.

Griffiths, P. E., and R. D. Gray. "Developmental Systems and Evolutionary Explanation." *The Journal of Philosophy* XCI, no. 6 (1994): 277–304.

Gunton, Colin E. *The Promise of Trinitarian Theology*. Edinburgh: T&T Clark, 1991.

——. *The Triune Creator: A Historical and Systematic Study*. Edinburgh: Edinburgh University Press, 1998.

Habgood, John. *Being a Person: Where Faith and Science Meet*. London: Hodder and Stoughton, 1998.

Harms, William F. "The Use of Information Theory in Epistemology." *Philosophy of Science* 65 (1998): 472–501.

Harris, Harriet A. "Should We Say That Personhood Is Relational?" *Scottish Journal of Theology* 51 (1998): 214–34.

Hart, Trevor. "Redemption and Fall." In *The Cambridge Companion to Christian Doctrine*, edited by Colin E. Gunton, 189–206. Cambridge: Cambridge University Press, 1997.

Hausman, Carl R. *Charles S. Peirce's Evolutionary Philosophy*. Cambridge: Cambridge University Press, 1993.

Hick, John. *The Myth of God Incarnate*. Louiseville: Westminster John Knox, 1977.

Hoffmann, Michael H. G. "Seeing Problems, Seeing Solutions. Abduction and Diagrammatic Reasoning in a Theory of Scientific Discovery." Georgia Institute of Technology, http://hdl.handle.net/1853/24031.

Hoffmeyer, Jesper. "A Biosemiotic Approach to the Question of Meaning." *Zygon: Journal of Religion and Science* 45, no. 2 (2010): 367–390.

——. *Signs of Meaning in the Universe*. Bloomington: Indiana University Press, 1996.

Hoffmeyer, Jesper, and Claus Emmeche. "Code-Duality and the Semiotics of Nature." In *On Semiotic Modelling*, edited by M. Anderson and F. Merrell, 117–66. Berlin: Mouton de Gruyter, 1992.

Hookway, Christopher. "Truth, Reality, and Convergence." In *The Cambridge Companion to Peirce*, edited by Cheryl Misak, 127–49. Cambridge: Cambridge University Press, 2004.

Hughes, Graham. *Worship as Meaning: A Liturgical Theology for Late Modernity*. Cambridge: Cambridge University Press, 2003.

Hunt, Anne. *What Are They Saying About the Trinity?* New York: Paulist Press, 1998.

Hutchinson, G. E. "Homage to Santa Rosalia or Why Are There So Many Kinds of Animals." *The American Naturalist* XCIII, no. 870 (1959): 145–59.

Irenaeus. *The Writings of Irenaeus, Volume 1*. Translated by Alexander Roberts and W. H. Rambaut. Edinburgh: T & T Clark, 1867.

Johnson, Elizabeth A. *She Who Is: The Mystery of God in Feminine Theological Discourse*. New York: Crossroad, 1992.

Justin. *Writings of Saint Justin Martyr*. Translated by Thomas B Falls. Vol. 6 of *The Fathers of the Church: A New Translation*. Edited by Hermigild Dressler, Robert P. Russell, Thomas P. Halton, William R. Tongue and M. Josephine Brennan. Washington DC: The Catholic University of America Press, 1948.

Kauffman, Stuart A. *At Home in the Universe: The Search for the Laws of Self-Organization and Complexity*. Harmondsworth: Penguin, 1995.

Kauffman, Stuart A. *Investigations*. Oxford: Oxford University Press, 2000.

Kay, Lily E. *Who Wrote the Book of Life?: A History of the Genetic Code*. Stanford: Stanford University Press, 2000.

Kelly, J. N. D. *Early Christian Doctrines*. 5th ed. London: A & C Black, 1977.

Kenny, Anthony. *A Brief History of Western Philosophy*. Oxford: Blackwell, 1998.

Ketner, Kenneth Laine. *His Glassy Essence: An Autobiography of Charles Sanders Peirce*. Nashville: Vanderbilt University Press, 1998.

Kierkegaard, Søren. *Practice in Christianity, Edited and Translated with Introduction and Notes by Howard V Hong and Edna H. Hong*. 1850, Princeton: Princeton University Press, 1991.

Knight, Christopher C. *Wrestling with the Divine: Religion, Science and Revelation*. Minneapolis: Fortress Press, 2001.

Knight, Robin D., Stephen J. Freeland, and Laura F. Landweber. "Rewiring the Keyboard: Evolvability of the Genetic Code." *Nature Reviews* 2 (2001): 49–58.

Knight, Robin D., and Laura F. Landweber. "The Early Evolution of the Genetic Code." *Cell* 101 (2000): 569–72.

Koestler, Arthur. *The Act of Creation*. New York: Mcmillan, 1964.

Kopecek, Thomas A. *A History of Neo-Arianism*. 2 vols. Philadelphia: The Philadelphia Patristic Foundation, 1979.

Krampen, Martin. "Phytosemiotics." *Semiotica* 36, no. 3/4 (1981): 187–209.

——. "Phytosemiotics Revisited." In *Biosemiotics: The Semiotic Web 1991*, edited by Thomas A. Sebeok and Jean Umiker-Sebeok, 213–19. Berlin: Mouton de Gruyter, 1992.

Kuhn, Thomas S. *The Structure of Scientific Revolutions*. 2nd ed. Chicago: University of Chicago Press, 1970.

Kull, Kalevi, Terrence Deacon, Claus Emmeche, Jesper Hoffmeyer, and Frederik Stjernfelt. "Theses on Biosemiotics: The Saka Convention." *Biological Theory* 4, no. 2 (2009): 1–7.

Küppers, Bernd-Olaf. *Information and the Origin of Life*. Cambridge: MIT Press, 1990.

Laudan, Larry. *Progress and Its Problems: Toward a Theory of Scientific Growth*. Berkeley: University of California Press, 1977.

LaCugna, Catherine Mowry. *God for Us: The Trinity and Christian Life*. San Francisco: Harper Collins, 1991.

Lakatos, Imre. "Falsification and the Methodology of Scientific Research Programmes." In *Criticism and the Growth of Knowledge: Proceedings of the International Colloquium in the Philosophy of Science, London, 1965, Volume 4*, edited by I. Lakatos and A. Musgrave, 91–196. Cambridge: Cambridge University Press, 1970.

Lakoff, George, and Mark Johnson. *Metaphors We Live By*. Chicago: University of Chicago Press, 1980.

Leibniz, Gottfried Wilhelm Von. "On the Ultimate Origination of the Universe (1697)." In *Monadology and Other Philosophical Essays, with an Introduction and Notes by Paul Schrecker*, 84–94. Indianapolis: Bobbs-Merrill, 1965.

Levinas, Emmanuel. *Alterity and Transcendence*. Translated by Michael B. Smith. New York: Columbia University Press, 1999.

Lewis-Williams, David. *The Mind in the Cave: Consciousness and the Origins of Art*. London: Thames and Hudson, 2002.

Lienhard, Joseph T. "The Cappadocian Settlement." In *The Trinity*, edited by Stephen T. Davis, Daniel Kendall and Gerald O'Collins, 99–121. Oxford: Oxford University Press, 1999.

Locke, John. *An Essay Concerning Human Understanding*, Collated and Annotated with Prolegomena, Biographical, Critical and Historical by Alexander Campbell Fraser, in Two Volumes (Volume 1). 1690; Oxford: The Clarendon Press, 1894.

——. *An Essay Concerning Human Understanding*, Collated and Annotated with Prolegomena, Biographical, Critical and Historical by Alexander Campbell Fraser, in Two Volumes (Volume 2).1690; Oxford: Clarendon Press, 1894.

Lonergan, Bernard J. *Verbum: Word and Idea in Thomas Aquinas*. Notre Dame: University of Notre Dame Press, 1967.

Louw, Johannes P., and Eugene A. Nida, eds. *Greek-English Lexicon of the New Testament Based on Semantic Domains*. 2nd ed. 2 vols. New York: United Bible Societies, 1988.

Lui, L. T., Z. R. Yang, N. Lehman, B. Larson, A. J. N. Robinson, and C. C. B. Southgate. *Environment-Specific State-Changes in Simple Protobiotic Systems: Investigation of the Role of Interpretative Responsiveness in the Origin of Life*. Poster presented at the American Academy for the Advancement of Science, San Diego, California, 21 February 2010.

Luisi, Pier Luigi, Tereza Pereira de Souza, and Pasquale Stano. "Vesicle Behavior: In Search of Explanations." *Journal of Physical Chemistry, B.* 112, no. 46 (2008): 14655–64.

Luther, Martin. *Lectures on Genesis*. Vol. 1 of *Luther's Works*, edited by Jaroslav Pelikan. Saint Louis: Concordia, 1958.

Macdonald, Graham, and David Papineau, eds. *Teleosemantics: New Philosophical Essays*. Oxford: Clarendon Press, 2006.

Mansy, S. S., and J. W. Szostak. "Reconstructing the Emergence of Cellular Life through the Synthesis of Model Protocells." *Cold Spring Harbour Symposia On Quantitative Biology*, 74: 47–54 (2009).

Markoš, Anton. *Readers of the Book of Life: Contextualizing Developmental Evolutionary Biology*. Oxford: Oxford University Press, 2002.

Masters, Roger D. "Genes, Language and Evolution." *Semiotica* 2 (1970): 295–320.

May, Gerhard. *Creatio Ex Nihilo: The Doctrine Of "Creation out of Nothing" In Early Christian Thought*. Edinburgh: T&T Clark, 1994.

Mayr, Ernst. "How Biology Differs from the Physical Sciences." In *Evolution at a Crossroads: The New Biology and the New Philosophy of Science*, edited by David J. Depew and Bruce H. Weber, 43–63. Cambridge: MIT Press, 1985.

McFague, Sallie. *Metaphorical Theology: Models of God in Religious Language*. London: SCM Press, 1983.

McGrath, Alister E. *Historical Theology: An Introduction to the History of Christian Thought*. Oxford: Blackwell, 1998.

McGuckin, John. "Filioque." In *The Oxford Companion to Christian Thought*, edited by Adrian Hastings, Alistair Mason and Hugh Pyper, 241–42. Oxford: Oxford University Press, 2000.

Millikan, Ruth. "Thoughts without Laws: Cognitive Science without Content." *Philosophical Review* 95 (1986): 47–80.

Millikan, Ruth Garrett. *Language, Thought and Other Biological Categories*. Cambridge: MIT Press, 1984.

——. *Varieties of Meaning: The 2002 Jean Nicod Lectures*. Cambridge: MIT Press, 2004.

Misak, Cheryl. "C. S. Peirce on Vital Matters." In *The Cambridge Companion to Peirce*, edited by Cheryl Misak, 150–71. Cambridge: Cambridge University Press, 2004.

——. "Charles Sanders Peirce (1839–1914)." In *The Cambridge Companion to Peirce*, edited by Cheryl Misak, 1–26. Cambridge: Cambridge University Press, 2004.

Mithen, Steven. *The Prehistory of the Mind: A Search for the Origins of Art, Religion and Science*. London: Thames and Hudson, 1996.

——. *The Singing Neanderthals: The Origins of Music, Language, Mind and Body*. London: Weidenfeld and Nicholson, 2005.

Moltmann, Jürgen. *Experiences in Theology: Ways and Forms of Christian Theology*. Minneapolis: Fortress Press, 2000.

——. *God in Creation: An Ecological Doctrine of Creation*. Translated by Margaret Kohl. London: SCM Press, 1985.

——. *The Trinity and the Kingdom of God: The Doctrine of God*. Translated by Margaret Kohl. London: SCM Press, 1981.

Moody Smith, D. *The Theology of the Gospel of John*. Cambridge: Cambridge University Press, 1995.

Morowitz, H. J. *The Beginnings of Cellular Life: Metabolism Recapitulates Biogenesis*. New Haven: Yale University Press, 1992.

Murphy, Nancey. *Theology in an Age of Scientific Reasoning*. New York: Cornell University Press, 1990.

Murray, Paul D. "Truth and Reason in Science and Theology: Points of Tension, Correlation and Compatibility." In *God, Humanity and the Cosmos: A Companion to the Science and Religion Debate*, edited by Christopher Southgate, 82–115. London: T&T Clark, 2005.

Neville, Robert Cummings. *The Highroad around Modernism*. New York: State University of New York Press, 1992.

——. *On the Scope and Truth of Theology: Theology as Symbolic Engagement*. New York: T&T Clark, 2006.

——. *Symbols of Jesus: A Christology of Symbolic Engagement*. Cambridge: Cambridge University Press, 2001.

——. *The Truth of Broken Symbols*. New York: State University of New York Press, 1996.

Newman, Carey C., ed. *Jesus and the Restoration of Israel: A Critical Assessment of N. T. Wright's Jesus and the Victory of God*. Downers Grove: InterVarsity Press, 1999.

Nielsen, Jesper Tang. "The Secondness of the Fourth Gospel: A Peircean Reading." *Studia Theologica* 60 (2006): 123–44.

Noble, William, and Iain Davidson. *Human Evolution, Language and Mind: A Psychological and Archaeological Enquiry*. Cambridge: Cambridge University Press, 1996.

Nöth, Winfried. *Handbook of Semiotics*. Bloomington: Indiana University Press, 1995.

Numbers, Ronald L. *The Creationists: The Evolution of Scientific Creationism*. Berkeley: University of California Press, 1992.

O'Collins, Gerald. "The Holy Trinity: The State of the Questions." In *The Trinity*, edited by Stephen T. Davis, Daniel Kendall and Gerald O'Collins, 1–25. Oxford: Oxford University Press, 1999.

——. "The Incarnation: The Critical Issues." In *The Incarnation: An Interdisciplinary Symposium on the Incarnation of the Son of God*, edited by Stephen T. Davis, Daniel Kendall and Gerald O'Collins, 1–27. Oxford: Oxford University Press, 2002.

——. *The Tripersonal God: Understanding and Interpreting the Trinity*. London: Geoffrey Chapman, 1999.

Olson, Roger E., and Christopher A. Hall. *The Trinity*. Grand Rapids: William B. Eerdmans, 2002.

Orange, Donna M. *Peirce's Conception of God: A Developmental Study*. Lubbock: Institute for Studies in Pragmaticism, 1984.

Orgel, Leslie E. "The Origin of Biological Information." In *Life's Origin: The Beginnings of Biological Information*, edited by J. William Schopf, 140–57. Berkeley: University of California Press, 2002.

Oró, John. "Historical Understanding of Life's Beginnings." In *Life's Origin: The Beginnings of Biological Evolution*, edited by William J. Schopf, 7–45. Berkeley: University of California Press, 2002.

Otto, Rudolf. *The Idea of the Holy*. Translated by John W. Harvey. 1917; Harmondsworth: Penguin, 1959.

Oyama, Susan. *The Ontogeny of Information: Developmental Systems and Evolution*. 1985; 2nd Edition, revised and expanded with a forward by Richard C. Lewontin, Durham: Duke University Press, 2000.

Oyama, Susan, Paul E. Griffiths, and Russell D. Gray. "Introduction: What Is Developmental Systems Theory?" In *Cycles of Contingency: Developmental Systems and Evolution*, edited by Susan Oyama, Paul E. Griffiths and Russell D. Gray, 1–11. Cambridge: MIT Press, 2001.

Pannenberg, Wolfhart. *Systematic Theology, Volume 1*. Translated by Geoffrey W. Bromiley. Grand Rapids: Eerdmans, 1991.

——. *Systematic Theology, Volume 2*. Translated by Geoffrey W. Bromiley. Grand Rapids: Eerdmans, 1994.

Peacocke, Arthur. "God's Interaction with the World: The Implications of Deterministic "Chaos" And of Interconnected and Interdependent Complexity." In *Chaos and Complexity: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Nancy Murphy and Arthur R. Peacocke, 263–87. Vatican City / Berkeley: Vatican Observatory / Center for Theology and the Natural Sciences, 1995.

Peacocke, Arthur R. "Chance and Law in Irreversible Thermodynamics, Theoretical Biology, and Theology." In *Chaos and Complexity: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Nancy Murphy and Arthur R. Peacocke, 123–43. Vatican City / Berkeley: Vatican Observatory / Centre for Theology and the Natural Sciences, 1995.

Peirce, C. S. *The Charles S. Peirce Papers*. Cambridge: Harvard University Press, Photographic Service, 1966.

Peirce, Charles S. *The Collected Papers of Charles Sanders Peirce*, Volumes I–VI, edited by Charles Hartshorne and Paul Weiss. Cambridge, Massachusetts: Harvard University Press, 1931–1935.

——. *The Collected Papers of Charles Sanders Peirce*, Volumes VII–VIII, edited by Arthur W. Burks. Cambridge, Massachusetts: Harvard University Press, 1958.

——. *The Essential Peirce: Selected Philosophical Writings, Volume 1 (1867–1893)*. Edited by Nathan Houser and Christian Kloesel. Bloomington: Indiana University Press, 1992.

——. *The Essential Peirce: Selected Philosophical Writings, Volume 2 (1893–1913)*. Edited by the Peirce Edition Project. Bloomington: Indiana University Press, 1998.

Perlman, Mark. "Pagan Teleology: Adaptational Role and the Philosopy of Mind." In *Functions: New Essays in the Philosophy of Psychology and Biology*, edited by André Ariew, Robert Cummins and Mark Perlman, 263–90. Oxford: Oxford University Press, 2002.

Phillips, D. Z. *Faith after Foundationalism: Plantinga-Rorty-Lindbeck-Berger. Critiques and Alternatives*. Boulder, Colorado: Westview Press, 1995.

——. *Wittgenstein and Religion*. New York: St. Martin's Press, 1993.

Placher, William C. *The Triune God: An Essay in Postliberal Theology*. Louisville: Westminster John Knox, 2007.

Polkinghorne, John. "The Metaphysics of Divine Action." In *Chaos and Complexity: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Nancy Murphy and Arthur R. Peacocke, 148–56. Vatican City / Berkeley: Vatican Observatory / Center for Theology and the Natural Sciences, 1995.

——. *Science and Christian Belief: Theological Reflections of a Bottom-up Thinker*. London: SPCK, 1994.

——. *Science and Theology: An Introduction*. London: SPCK, 1998.

Power, William. "Informative Discourse and Theology." *Religious Studies* 12 (1976): 21–36.

Prestige, G. L. "Agen[N]etos and Cognate Words in Athanasius." *The Journal of Theological Studies* 34 (1933): 258–65.

——. *God in Patristic Thought*. 1936; Second Edition, London: SPCK, 1952.

Prigogine, Ilya. *The End of Certainty: Time, Chaos and the New Laws of Nature*. New York: The Free Press, 1997.

Prigogine, Ilya, and Isabelle Stengers. *Order out of Chaos: Man's New Dialogue with Nature*. London: Fontana, 1985.

Quine, Willard Van Oram. *Word and Object*. Cambridge: MIT Press, 1960.

Rahner, Karl. *Foundations of the Christian Faith: An Introduction to the Idea of Christianity*. Translated by William V. Dych. New York: Crossroad, 2006.

——. *Hearers of the Word*. Translated by Ronald Walls. Revised Edition. London and Sydney: Sheed and Ward, 1969.

——. *Theological Investigations*. 2nd ed. Vol. 1. London: Darton, Longman & Todd, 1965.

——. *Theological Investigations Volume 4*. Translated by Kevin Smyth. London: Darton, Longman & Todd, 1966.

——. *The Trinity*. Translated by Joseph Donceel. With an Introduction, Index and Glossary by Catherine Mowry LaCugna. New York: Crossroad Herder, 1999.

Raposa, Michael L. *Peirce's Philosophy of Religion*. Bloomington: Indiana University Press, 1989.

Rescher, Nicholas. *Peirce's Philosophy of Science: Critical Studies in His Theory of Induction and Scientific Method*. Notre Dame: University of Notre Dame Press, 1978.

Roberts, Don D. *The Existential Graphs of C.S. Peirce*. The Hague: Mouton de Gruyter, 1973.

Robin, R. S. *Annotated Catalogue of the Papers of Charles S. Peirce*. Amherst: University of Massachusetts Press, 1967.

Robinson, Andrew J. "A Semiotic Model of the Trinity: God, Evolution and the Philosophy of Charles Sanders Peirce." Ph.D. diss., University of Exeter, 2003.

——. "Continuity, Naturalism and Contingency: A Theology of Evolution Drawing on the Semiotics of C.S. Peirce and Trinitarian Thought." *Zygon: Journal of Religion and Science* 39, no. 1 (2004): 111–36.

——. "Emergence and the Origin of Life." *Reviews in Science and Religion* 49 (2007): 29–37.

Robinson, Andrew, and Neil Spurway, eds. *Evolving Darwinism: From Natural Theology to a Theology of Nature*. Cambridge: Cambridge Scholars Press, Forthcoming.

Robinson, Andrew, and Christopher Southgate. "Broken Symbols?: Response to F. LeRon Shults." *Zygon: Journal of Religion and Science* 46, no. 3 (2010): 733–738.

——. "A General Definition of Interpretation and Its Application to Origin of Life Research." *Biology and Philosophy* 25, no. 2 (2010): 163–81.

——. "Incarnation and Peirce's Taxonomy of Signs." *Theology and Science* 8, no. 3 (2010): 265–282.

——. "Semiotics as a Metaphysical Framework for Christian Theology." *Zygon: Journal of Religion and Science* 46, no. 3 (2010): 689–712.

——. "Semiotics, Anthropology, and Religious Transformation." *Theology and Science* 8, no. 3 (2010): 283–302.

Robinson, Andrew, Christopher Southgate, and Terrence Deacon. "Discussion of the Conceptual Basis of Biosemiotics." *Zygon: Journal of Religion and Science* 45, no. 2 (2010): 409–418.

Rogers Jr., Eugene F. *The Holy Spirit: Classic and Contemporary Readings*. Chichester: Wiley-Blackwell, 2009.

Ross, James. "Analogy." In *The Oxford Companion to Christian Thought*, edited by Adrian Hastings, Alistair Mason and Hugh Pyper, 15–16. Oxford: Oxford University Press, 2000.

Russell, Robert John. "Introduction." In *Chaos and Complexity: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Nancy Murphy and Arthur R. Peacocke, 1–31. Vatican City / Berkeley: Vatican Observatory / Center for Theology and the Natural Sciences, 1995.

——. "Special Providence and Genetic Mutation: A New Defense of Theistic Evolution." In *Evolutionary and Molecular Biology: Scientific Perspectives on Divine Action*, edited by Robert John Russell, William R. Stoeger and Francisco J. Ayala, 191–224. Vatican City / Berkeley: Vatican Observatory / Center for Theology and the Natural Sciences, 1998.

Russell, Robert John, Nancey Murphy, and Arthur Peacocke, eds. *Chaos and Complexity: Scientific Perspectives on Divine Action*. Vatican City: Vatican Observatory, 1995.

Russell, Robert John, Nancey Murphy, and William R Stoeger, eds. *Scientific Perspectives on Divine Action: Twenty Years of Challenge and Progress*. Vatican City / Berkeley: Vatican Observatory / Centre for Theology and the Natural Sciences, 2007.

Russell, Robert John, William R. Stoeger, and Francisco J. Ayala, eds. *Evolutionary and Molecular Biology: Scientific Perspectives on Divine Action*. Vatican City: Vatican Observatory, 1998.

Salthe, Stanley N. "Meaning in Nature: Placing Biosemiotics within Pansemiotics." In *Biosemiotics: Information, Codes and Signs in Living Systems*, edited by Marcello Barbieri, 207–17. New York: Nova Science Publishers, 2007.

Salthe, S. N. "Naturalizing Semiotics." *Semiotica* 120, no. 3/4 (1998): 381–94.

Sandage, Steven J., and F. LeRon Shults. *The Faces of Forgiveness: Searching for Wholeness and Salvation*. Grand Rapids: Baker Academic, 2003.

Saussure, Ferdinand de. *Course in General Linguistics*. Translated by Wade Baskin. Edited by Charles Bally, Albert Sechehay and Albert Riedlinger. London: McGraw-Hill, 1959.

Schneider, T. D. "Evolution of Biological Information." *Nucleic Acids Research* 28 (2000): 2794–99.

Schrödinger, Erwin. *What Is Life?: The Physical Aspect of the Living Cell. In: What Is Life? & Mind and Matter*. 1944; Cambridge: Cambridge University Press, 1967.

Schwarz, Hans. *Christology*. Grand Rapids: William B. Eerdmans, 1998.

Schwöbel, Christoph. "God, Creation and the Christian Community: The Dogmatic Basis of a Christian Ethic of Createdness." In *The Doctrine of Creation: Essays in Dogmatics, History and Philosophy*, edited by Colin E. Gunton, 149–76. Edinburgh: T&T Clark, 1997.

Sebeok, Thomas. *Contributions to the Doctrine of Signs*. 2nd ed. Lanham: University Press of America, 1985.

——. *A Sign Is Just a Sign*. Bloomington: Indiana University Press, 1991.

Sebeok, Thomas A. "The Doctrine of Signs." *Journal of Social and Biological Structures* 9 (1986): 345–52.

Shannon, Claude E. "The Mathematical Theory of Communication." In *The Mathematical Theory of Communication*, edited by Claude E. Shannon and Warren Weaver, 29–125. 1949; reprint, Urbana: University of Illinois Press, 1964.

Shapiro, Marianne. *From the Critic's Workbench: Essays in Literature and Semiotics*. Edited by Michael Shapiro. New York: Peter Lang Publishing, 2005.

Sheets-Johnstone, Maxine. *The Corporeal Turn: An Interdisciplinary Reader*. Exeter: Imprint Academic, 2009.

——. *The Roots of Thinking*. Philadelphia: Temple University Press, 1990.

Short, T. L. "Darwin's Concept of Final Cause: Neither New nor Trivial." *Biology and Philosophy* 17, no. 3 (2002): 323–40.

——. "The Development of Peirce's Theory of Signs." In *The Cambridge Companion to Peirce*, edited by Cheryl Misak, 214–40. Cambridge: Cambridge University Press, 2004.

——. *Peirce's Theory of Signs*. Cambridge: Cambridge University Press, 2007.

Shults, F. LeRon. *Christology and Science*. Aldershot: Ashgate, 2008.

——. "Transforming Theological Symbols." *Zygon: Journal of Religion and Science* 46, no. 3 (2010): 713–712.

Smyth, Richard A. *Reading Peirce Reading*. Lanham: Rowman & Littlefield, 1997.

Sober, Elliott. *The Nature of Selection*. Chicago: Chicago University Press, 1984.

Soffer, Olga, and Margaret W. Conkey. "Studying Ancient Visual Cultures." In *Beyond Art: Pleistocene Image and Symbol*, edited by Margaret W Conkey, Olga Soffer, Deborah Stratmann and Nina G. Jablonski, 1–16. San Francisco: California Academy of Sciences, 1997.

Southgate, Christopher. *The Groaning of Creation: God, Evolution and the Problem of Evil*. Louisville and London: Westminster John Knox Press, 2008.

Southgate, Christopher, Michael Robert Negus, and Andrew Robinson. "Theology and Evolutionary Biology." In *God, Humanity and the Cosmos: Second Edition Revised and Expanded*, edited by Christopher Southgate, 154–92. London / New York: T&T Clark, 2005.

Southgate, Christopher, and Andrew Robinson. "Interpretation and the Origin of Life." *Zygon: Journal of Religion and Science* 45, no. 2 (2010): 745–760.

Sterelny, K, and P. E. Griffiths. *Sex and Death: An Introduction to the Philosophy of Biology*. Chicago: University of Chicago Press, 1999.

Swinburne, R. G. "The Argument from Design." *Philosophy* 43 (1968): 199–212.

Taylor, John V. *The Go between God: The Holy Spirit and Christian Mission*. London: SCM Press, 1972.

Taylor, Mark Lloyd. *God Is Love: A Study in the Theology of Karl Rahner*. Edited by Carl A Raschke, American Academy of Religion Academy Series. Atlanta: Scholars Press, 1986.

Teilhard de Chardin, Pierre. *The Phenomenon of Man*. London: Collins, 1959.

Tennant, F. R. *Philosophical Theology, Volume 2: The World, the Soul, and God* Cambridge: Cambridge University Press, 1928; reprint 1956.

The Archbishop's Council. *Common Worship: Services and Prayers for the Church of England*. London: Church House Publishing, 2000.

Thompson, D'Arcy Wentworth. *On Growth and Form*. 1917; Abridged Edition edited by John Tyler Bonner 1961, Cambridge: Cambridge University Press; Canto imprint, 1992.

Tilley, Terrence W. *The Disciples' Jesus: Christology as Reconciling Practice*. New York: Orbis Books, 2008.

Tomasello, Michael. *Origins of Human Communication*. Cambridge: MIT Press, 2008.

Toom, Tarmo. *Classical Trinitarian Theology*. New York: T&T Clark, 2007.

Torrance, Thomas F. *The Christian Doctrine of God: One Being Three Persons*. Edinburgh: T&T Clark, 1996.

——. *The Trinitarian Faith: The Evangelical Theology of the Ancient Catholic Church*. Edinburgh: T&T Clark, 1988.

Tracy, Thomas F. "Particular Providence and God of the Gaps." In *Chaos and Complexity: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Nancey Murphy and Arthur Peacocke, 289–324. Vatican City / Berkeley: Vatican Observatory / Centre for Theology and the Natural Sciences, 1995.

Tribus, Myron, and Edward C. McIrvine. "Energy and Information." *Scientific American* 225 (1971): 179–88.

Trigg, Joseph W. *Origen*. London: Routledge, 1998.

Vallentin, Antonina. *Einstein: A Biography*. Translated by Moura Budberg. London: Weidenfeld and Nicolson, 1954.

van Huyssteen, J. Wentzel. *Alone in the World?: Human Uniqueness in Science and Theology*. Grand Rapids / Cambridge: William B. Eerdmans, 2006.

van Huyssteen, J. Wentzel. *Essays in Postfoundationalist Theology*. Grand Rapids: William B. Eerdmans, 1997.

Wawrykow, Joseph P. *The Westminster Handbook to Thomas Aquinas*. Louisville: Westminster John Knox, 2005.

Weatherford, Roy C. "Freedom and Determinism." In *The Oxford Companion to Philosophy*, edited by Ted Honderich, 292–93. Oxford: Oxford University Press, 1995.

Weber, Bruce. "Emergence of Life." *Zygon: Journal of Religion and Science* 42, no. 4 (2007): 837–56.

Wheeler, Wendy. *The Whole Creature: Complexity, Biosemiotics and the Evolution of Culture*. London: Lawrence and Wishart, 2006.

Whitehead, Alfred North. *Religion in the Making*. 1926; New York: World Publishing Company, 1960.

Wigner, Eugene P. "The Unreasonable Effectiveness of Mathematics in the Natural Sciences." *Communications in Pure and Applied Mathematics* 13, no. 1 (1960).

Williams, Rowan. *Arius: Heresy and Tradition*. 2nd ed. London: SCM Press, 2001.

Wright, N. T. *Jesus and the Victory of God*. London: SPCK, 1996.

——. "Jesus' Self-Understanding." In *The Incarnation: An Interdisciplinary Symposium on the Incarnation of the Son of God*, edited by Stephen T Davis, Daniel Kendall and Gerald O'Collins, 47–61. Oxford: Oxford University Press, 2002.

Wynn, Mark. *Emotional Experience and Religious Understanding: Integrating Perception, Conception and Feeling*. Cambridge: Cambridge University Press, 2005.

Young, Frances. *From Nicaea to Chalcedon: A Guide to the Literature and Its Background*. London: SCM Press, 1983.

Zizioulas, John D. *Being and Communion: Studies in Personhood and the Church*. Crestwood, NY: St Vladimir's Seminary Press, 1985.

——. "The Doctrine of God the Trinity Today: Suggestions for an Ecumenical Study." In *The Forgotten Trinity, Volume 3: A Selection of Papers Presented to the BCC Study Commission on Trinitarian Doctrine Today*, 19–32. London: British Council of Churches, 1991.

INDEX OF NAMES

INDEX OF SUBJECTS