Peirce's Conception of Metaphysics

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Abstract

This thesis develops and defends a Peircean conception of the task of metaphysics and critically compares it with recent anti-metaphysical forms of pragmatism.

Peirce characterises metaphysics in terms of its place within his hierarchical classification of the sciences. According to the classification, metaphysics depends on logic for principles and provides principles to the natural and social sciences.

This arrangement of the sciences is defended by appeal to Peirce's account of philosophy as 'cenoscopy'. The dependence of the natural and social sciences on cenoscopy is then argued for on the basis of Peirce's rejection of psychologism and in terms of the necessity of abductive inference. Peirce's position is then compared with recent forms of pragmatism. While it is less naturalistic, Peirce's position is defended on pragmatist grounds.

An account of Peirce on truth is then developed. Peirce's account of truth in terms of an ideal limit of inquiry is defended as consistent with recent, more deflationary, approaches. The truth of 'abstract propositions' is a matter of local indefeasibility. These abstract propositions are related to the 'absolute truth', understood as a single non-abstract proposition. The truth of this proposition is then understood in terms of an identity theory.

Two conceptions of Peircean metaphysics are presented. Both are 'abductive'. Their task is to explain the possibility of success in inquiry. However, only one proposal accepts the notion of an absolute truth. The 'absolutist' proposal is defended as an interpretation of Peirce and as a contemporary option for pragmatist philosophers.

The thesis concludes by comparing recent anti-metaphysical arguments due to Huw Price with the Peircean position. Room for the absolutist proposal is defended by means of an account of recent exchanges between Price and Robert Brandom on dispositional modality.

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Abbreviations

Citations from *Collected Papers* are of the form CP$x.y$, where x denotes volume x, and y denotes paragraph y. Citations from the two volumes of *Essential Peirce*, the seven volumes of the *Writings of Charles Peirce*, and the four volumes of *New Elements of Mathematics* are all of the form A$x:y$, where A denotes the abbreviation, x the volume, and y the page. Citations of Peirce's manuscripts are of the form R$x.y$, where x is the manuscript number, and y is the page if available. Citations of *The Published Works of Charles Sanders Peirce* is of the form PW$x.y$, where x is the catalogue number and y is the page if available. I have attempted to cite from *Writings* and the two volumes of *Essential Peirce* wherever possible. In addition, I have attempted wherever possible to include a date with my citations of Peirce. If the work in question was published during Peirce's lifetime I use the date of first publication, if not, I use the date that it was written (if available). Other citation practices should be self-explanatory.

CP   Charles Sanders Peirce (1931–35, 1958). *Collected Papers of Charles Sanders Peirce*. Ed. by Paul Weiss and Charles Hartshorne (Vols. 1–6). Ed. by Arthur W. Burks (Vols. 7–8). 8 vols. Cambridge: Harvard University Press.

EP   Charles Sanders Peirce (1992, 1998). *The Essential Peirce: Selected Philosophical Writings*. Ed. by Nathan Houser and Christian Kloesel (Vol. 1). Ed. by The Peirce Edition Project (Vol. 2). 2 vols. Bloomington: Indiana University Press.

ILS   Charles Sanders Peirce (2014). *Illustrations of the Logic of Science*. English. Ed. by Cornelis De Waal. Chicago: Open Court.

LW   John Dewey (1985). *The Later Works of John Dewey, 1925-1953*. Ed. by Jo Ann Boydston. 17 vols. Carbondale and Edwardsville: Southern Illinois University Press.

NM   Charles Sanders Peirce (1976). *The New Elements of Mathematics*. Ed. by
      Carolyn Eisele. 4 vols. The Hague: Mouton.

PW   Charles Peirce (2012). *The Published Works of Charles Sanders Peirce*. Ed.
      by Kenneth Laine Ketner. URL: http://www.pragmaticism.net/works/.

R   Richard Robin (1967). *Annotated Catalogue of the Papers of Charles S.
      Peirce*. URL: http://www.iupui.edu/~peirce/robin/robin.htm.

RLT   Charles Sanders Peirce (1992). *Reasoning and the Logic of Things: The
      Cambridge Conferences Lectures of 1898*. Ed. by Kenneth Laine Ketner.
      Cambridge: Harvard University Press.

W   Charles Sanders Peirce (1982–). *Writings of Charles S. Peirce*. Ed. by The
      Peirce Edition Project. 8 vols. Bloomington: Indiana University Press.

Contents

Introduction

Pragmatism has a difficult relationship with metaphysics. On one hand, the pragmatists direct their attention towards the concrete details of our practices, often at the expense of traditional philosophical concerns. Some even take the primary aim of pragmatism to be the end of metaphysics (e.g. Seigfried 2001; Rorty 1979). Attention to ourselves and our practices can encourage the thought that there is no story to be told about the world as it is independently of us. On the other hand, many classical and contemporary pragmatists have tried to produce metaphysical work consistent with their pragmatist scruples.[1] This thesis offers an account of Peirce's conception of metaphysics and critically compares it with some recent, anti-metaphysical, pragmatist positions. It is hoped that focusing on the basic strategy that Peirce attempts to carry out in his metaphysics, rather than on his detailed first-order metaphysical proposals, will enable us to come to a better understanding of its contemporary viability.

This study, since it is concerned with Peirce's understanding of the role and function of metaphysics, will focus primarily on Peirce's later work. Peirce's creative work on first-order metaphysical issues largely occurs in his *Monist Metaphysical Series* (1891–1893), and in some earlier material, including *A Guess at the Riddle* (1887–1888). This work will sometimes be referred to in order to illustrate Peirce's conception of the task of metaphysics.[2] After the Monist series, Peirce turns his attention to other issues. One set of issues concerns the systematic relationships between philosophy, its various subdisciplines, and the other domains

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[1]One tendency is to endorse some form of process metaphysics (e.g. Rockwell 2008; Hausman 2002; Seibt 1990; Rosenthal 1986). For a more classical example, consider William James's attempts to decide between metaphysical hypotheses (in part) by considering their implications for our practical life (e.g. 'The Dilemma of Determinism' in James 1948). A contemporary Jamesian, 'ethically grounded', version of pragmatist metaphysics is developed in Pihlström 2009.

[2]There are many worthwhile studies of this work in its own right already available (e.g. Reynolds 2002; Parker 1998; Sheriff 1994; Esposito 1980). There are also important studies of the form of 'scholastic realism' that Peirce adopted (e.g. Mayorga 2007; Boler 1963).

of theoretical inquiry. One important product of this work is a detailed hierarchical classification of the various domains of theoretical inquiry. We thus find many resources for understanding the nature of metaphysics, and the nature of philosophy in general, in Peirce's work from the mid-1890's onward. Moreover, much of this work, especially from 1898 onward, was carried with a defence of Peirce's form of pragmatism in mind. If we want clarity about the role of metaphysics for a pragmatist, then Peirce's work from the mid-1890's onward is the place to look.

The recent anti-metaphysical arguments of Huw Price can be compared with Peirce's conception of metaphysics. For Price, pragmatism is both naturalistic and anti-metaphysical. Price's pragmatism aims to 'make mincemeat' out of metaphysics (Price 2008, p. 95). Like other analytic pragmatists, Price develops the pragmatism's anti-metaphysical tendency by deploying deflationary semantics. The *locus classicus* for this kind of move is Richard Rorty's rejection of representationalism (e.g. Rorty 1982, p. xxv; Rorty 1979, pp. 3–7).[3] Price's anti-representationalism is a result of his particular form of naturalism: 'subject naturalism'. Price takes it that the pragmatist naturalist should start with what the natural sciences tell us about ourselves, rather than with what the natural sciences tell us about reality in general. If we start from this perspective, then we will see that the thought that we could either deny or affirm claims about the way the world is independently of our contingent situation (i.e. metaphysics) is hopeless. There is no 'representational notion' that could, consistently with subject naturalist scruples, do the work of metaphysics. On Price's view, then, we should be quietists regarding metaphysical claims.

Price provides a useful contrast with Peirce because they strikingly disagree on almost every issue that this thesis will consider. We will see that they diverge over the way in which a pragmatist should be a naturalist. Whereas Price begins with a natural-scientific story about ourselves, developed from a third-person perspective, Peirce thinks we start from the first-personal and second-personal perspectives of the participant in theoretical inquiry. While Price develops an account of the function of various vocabularies 'from the outside', Peirce's pragmatism attempts to articulate appropriate ideals for inquiry 'from the inside'. Peirce, in addition, takes this first-person and second-person work to be foundational for the natural (and social) sciences. By taking philosophy to have a foundational role for

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[3]This thesis does not deal in any detail with the relationship between Peirce's and Rorty's forms of pragmatism. These issues have been dealt with by previous scholarship (e.g. Bacon 2007; Cooke 2006, pp. 144–152; Hildebrand 2003; Mounce 2002; Haack 1995; Hausman 1993, pp. 194–225).

the other sciences, Peirce rejects both Price's naturalism, and 'liberal naturalism' more broadly. Moreover, Peirce thinks that we can move from claims about the truth of various propositions to claims about metaphysical reality.

However, there remains a sufficient kernel of commonality for the comparison to remain interesting. Both are pragmatists in so far as they take philosophical theorising to include, and be constrained by, some account of 'practice'. We are to understand ourselves as creatures interacting with an environment before we attempt to provide an account of, say, reality or thought in general. They differ in so far a Price's story about practice is taken from the natural sciences, whereas Peirce's is an attempt to produce, from within, an account of any possible inquirer. This account of the possible inquirer is then read onto reality by means of abductive inference. Interestingly, the room for something like Peirce's view within contemporary pragmatist is suggested by Robert Brandom's recent defence of a combination of a characteristically pragmatist form of 'modal expressivism' with a more full-throated modal realism. That is, there is a move from a claim about what is necessary for any possible user of a certain kind of language, to a claim about the modal structure of reality.

Chapter One introduces Peirce's hierarchical classification of the sciences. The classification clearly displays Peirce's conception of the task of metaphysics, but also his account of the relationship between philosophy and the other sciences. The chapter begins by setting out, on the basis of work by Beverley Kent, Peirce's post-1902 version of the classification. This final version of the classification includes both ethics and esthetics as amongst the disciplines that logic and metaphysics depend on. This chapter considers what Peirce means by calling something a science. What the sciences share is not any particular method or collection of results, but rather, a 'spirit'. The theoretical sciences are those social practices which have truth as their ultimate aim. The classification is hierarchical in so far as it presents a one-way relation of 'principle-provision' between the sciences. In addition to this, 'data' and 'suggestions' can be passed from subordinate sciences to superordinate sciences. The two important things to note for our purposes, are that the hierarchy depicts the natural and social sciences as dependent on philosophy for principles, and depicts metaphysics as dependent on the rest of philosophy. The chapter concludes by considering two possible pragmatist objections to Peirce's scheme: that it is foundationalist and that it is reductionist. I suggest that Peirce's scheme does indeed have those features, but in a way that should not worry the pragmatist.

In Chapter Two, Peirce's claim that philosophy is superordinate to the natural and social sciences is defended. This requires, first, an account of what Peirce thinks distinguishes philosophy from those other sciences. I introduce Peirce's claim that philosophy should be thought of as 'cenoscopy': the observational science of the commonly available. The natural and social sciences are, on the other hand, forms of 'idioscopy', or observational sciences that depend on observations that are not available to all inquirers. I argue that cenoscopy must be understood to be the study on the basis of observations that must be available to any inquirer simply by virtue of being an inquirer. This feature of Peirce's account of philosophy enables it to produce (fallible) necessity claims. That is, it can make claims about what must be the case for any possible inquirer. I then offer a series of arguments for the claim that cenoscopy should be thought of as superordinate to idioscopy. I offer a 'positive' argument on the basis of the need for abductive inferences in any form of inquiry. This leads us to want an account of what the inquirer brings to bear in any investigation. If the hope for convergence in the limit between inquirers is to be maintained, then we must likewise hope that there is an account not just of what this or that kind of inquirer brings to an investigation, but of any possible inquirer. I then offer a 'negative' argument on the basis of Peirce's rejection of psychologism in logic. Peirce's arguments can be generalised to apply to any proposal that puts an idioscopic science in a foundational role for cenoscopy. In such cases we risk forms of circularity that could undermine our attempts to attain 'rational self-control'.

Chapter Two concludes by drawing out the distinctions between Peirce's account of the science-philosophy relation with the work of Huw Price and David Macarthur. I distinguish Peirce's position from Price's 'subject naturalism' in the way outlined previously in this introduction. I also compare it with David Macarthur, as a representative of the broader 'liberal naturalist' tradition. Unlike Price, Macarthur insists that philosophy should involve first-person and third-person information. That is, we should not adopt scientism *within* philosophy. However, on Macarthur's view, philosophy should relinquish any pretensions to a foundational role for the other disciplines or human practices. I argue that Peirce's position, while in some respects less naturalistic, is preferable to both.

In Chapter Three, the resources for the transition from logic to metaphysics are developed. This turns on an account of truth. I begin with an account of the relationship between well-functioning inquiry and true propositions. I then con-

sider the distinct but compatible interpretations of Peirce on truth developed by Christopher Hookway and Cheryl Misak. I argue that these interpretations offer a *contextualist* account of truth in the sense that they focus on propositions as answers to particular questions in particular contexts. Such views downplay the idea that truth is an 'ideal limit' of inquiry. I offer an interpretation of Peirce which increases the role for the 'ideal limit', understood as a notion of *absolute* truth. I align the notion of the absolute truth with the idea of the 'ultimate interpretant' developed within Peirce's semeiotic theory. On this understanding, there is only one proposition that is absolutely true, and that proposition is identical with reality in so far as reality is intelligible. This understanding, while idiosyncratic in comparison with many contemporary accounts of truth, avoids many of the objections that have previously been deployed against Peirce's account of truth. On this view, something like the contextualist story applies to any 'abstract' proposition, where by contrast the absolute truth is not abstract. The latter notion is motivated by ideals that Peirce takes to be internal to the practice of theoretical inquiry. Chapter Three concludes by comparing the resultant account of truth with Huw Price's subject naturalist account of truth.

Chapter Four develops a Peircean account of the methodology of metaphysics on the basis of the account of truth developed in Chapter Three. It begins by considering Peirce's own characterisations of the functional role of metaphysics. On Peirce's view, metaphysics 'completes' cenoscopy and 'welds' in to idioscopy. I consider some of Peirce's methods for making the shift from logic to metaphysics. These are characterised by reading our story about any possible inquirer on to reality. The aim is to end up with an account of any reality which could be intelligibly inquired into. I consider, in addition, Peirce account of what it is to ascribe reality to something. Peirce distinguishes between a nominalist and a realist account of reality ascriptions, and argues for the latter. On this latter account, we cannot ascribe reality to the absolutely incognisable. I argue that this is an important methodological principle for Peirce's transition from logic to metaphysics. Chapter Four also attends to the connection between abduction and metaphysics. Metaphysics is abductive in so far as it is more dependent on the use of abductive inference than other forms of theoretical inquiry. It is also abductive in so far as it is concerned with the conditions for successful explanation. That is, Peircean metaphysics attempts to offer abductive hypotheses which explain either how successful explanation in the sciences has been possible, or which offer some account

of what any world in which successful explanation is possible would have to look like. Finally, I consider how much of this pattern can be maintained if we adopt only the contextualist account of truth. The merely-contextualist proposal closely matches the account of Peirce's metaphysics developed by Hookway. I argue that the adoption of the idea of the absolute truth is a necessary feature of any version of Peirce's metaphysics that attempts to make the logic-metaphysics transition just outlined.

In Chapter Five, I critically compare Peircean metaphysics with Price's anti-metaphysical arguments. I begin by presenting the basic form of Price's arguments, which turn on a rejection of representationalism. I then argue that the merely-contextualist approach to Peirce's metaphysics can make some headway against Price's position. It does this by focusing first on explanatory questions, rather than on questions of representation. That is, for Peirce to say that something is true, even in the contextualist sense, does not automatically require us to adopt any particular metaphysical attitude with respect to it. This contrasts with the kind of strategy that *begins* with a metaphysically loaded notion of representation. However, the contextualist approach leaves some responses open to Price. We can derive an argument from Price according to which *none* of the explanations for our success in inquiry require us to either affirm or deny judgements about mind-independent reality. In order to make this argument, we need to consider Price's recent distinction between 'e-representation' and 'i-representation'. Price's claim is that no explanation of our success in inquiry licenses the claim that judgements can be made about reality absent some contingent 'practical stance' that must be taken up in order to engage in the explanatory project at all. On Price's view, metaphysics would require us to be able to, *per impossibile*, make judgements about reality absent any such stance. In order to challenge this argument, I turn to the absolutist version of Peircean metaphysics. I argue from this perspective that Price's position requires him to adopt the nominalist conception of reality ascriptions. In addition to being inconsistent with Price's claim that he is not doing metaphysics, there is reason to think that a pragmatist should adopt the realist conception of reality ascriptions instead. I conclude by arguing that something like this Peircean move can be discerned in Brandom's recent exchanges with Price over the status of dispositional modality. Brandom's arguments for a kind of modal realism track key features of the Peircean approach.

Chapter 1

The Hierarchical Classification of the Sciences

Introduction

Throughout this thesis we will have reason to make reference to Peirce's hierarchical classification of the sciences. Two of the core questions of the thesis concern the relations between various aspects of theoretical inquiry. First, we need to consider the relationship between philosophy and the other sciences. This is important for understanding the distinct senses in which Peirce and more recent pragmatists count as 'naturalists'. That is, we ask in what sense philosophy is to be influenced by developments in the sciences. Secondly, we want to know what Peirce means by metaphysics. One aspect of this meaning which is particularly important for a pragmatist is the way in which metaphysics influences and is influenced by work in the other sciences. Peirce's own account of these relations is presented in his hierarchical classification of the sciences.[1]

Peirce's readers have taken various approaches to the classification. These have ranged from dismissal as anachronistic curiosity to endorsement as the key to the completion of Peirce's 'philosophical system'. This chapter begins by suggesting some of the issues at play in discussions of the classification. It then presents the classification in what Beverley Kent has called its 'perennial' (post-1902) form. I also follow Kent in presenting the classification as a diagram of the possible effects

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[1]Throughout the thesis I will use 'classification' and 'hierarchy' interchangeably when referring to Peirce's hierarchical classification.

of the various sciences on one another. That is, the classification's main purpose is to provide 'pragmatic clarifications' of the various forms of science.

In order to understand the classification, it will be necessary to consider first what it is that Peirce thinks he is classifying. The chapter thus continues with an account of what Peirce means by 'science'. Peirce points to the 'spirit' of the practitioners of science. I focus in this section on two divisions that are displayed in the hierarchy. The first is the threefold division between theoretical, practical, and retrospective sciences. This distinction helps to reveal what Peirce means by the spirit of science. The second division is the distinction between three varieties of theoretical science, of which two are particularly important for this thesis. 'Cenoscopy', Peirce's form of first philosophy, is the science carried out on the basis of commonly available observations. Cenoscopy is distinguished from 'idioscopy', which requires special observations. Consideration of this distinction sets up the next chapter and helps to reveal why theory and observation are so tightly linked for Peirce.

I then turn to the core relationships that Peirce depicts in the hierarchy. For one science to be subordinate to another in the hierarchy is for the former to be able to receive principles from the latter, while the reverse is not true. It is also for the former to be able to provide data and suggestions to the latter on the basis of which it can make further inferences or adjust its methods. I provide examples of these relationships from the history of science and from philosophy. I highlight the claim that the sciences are dependent on philosophy for principles. This claim will be taken up in more detail in Chapter Two.

The chapter concludes by heading off some objections and misinterpretations of the classification. These concern the extent to which Peirce's proposal should be thought of as either foundationalist or reductionist. I argue that there is an ineliminably foundationalist aspect to the classification, but that this should not worry the pragmatist. I also argue that there is a reading of the classification that is reductionist and that Peirce entertains it in some places. However, it is not a reading that we need to adopt nor is it necessarily incompatible with pragmatism.

1 Motives and Outcomes of Peirce's Classificatory Project

Peirce was not alone in being concerned with the classification of, and relations between, the sciences. The 19th century saw a great deal of interest in this task. There were many motivations for this kind of work. These ranged from interest in the classification as the basis for a 'science of science', which might reveal deep truths about the universe, all the way to the more immediately practical task of organising libraries and encyclopedias.[2] Moreover, issues concerning the nature, purpose, and value of the classification highlight some important dividing lines in later Peirce scholarship. As a result, it will be worth considering what Peirce hopes to achieve by classifying sciences. Having considered Peirce's purposes, we then turn to the final form of the classification.

1.1 Why Classify Sciences?

That Peirce was particularly interested in classifying sciences would not have raised eyebrows during his lifetime, or those of previous generations. His classification has many historical antecedents and Peirce shares some motivations with his philosophical ancestors and contemporaries.[3]

Modern approaches to classification start with Francis Bacon, who provided a classification on the basis of an understanding of the 'faculties of the soul' (Kent 1987, p. 23). That is, on the basis of some philosophical first principles about the nature of mind, he determined the forms that science might take. Elements of this are maintained in Peirce's classification, which, for instance, distinguishes between 'physical' and 'psychical' sciences.

The mechanical philosophy, accelerated by the success of Newton in the 17th century, endeavoured to understand all phenomena on the basis of physical principles. As a result, it was important to understand how the other sciences might

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[2]This knowledge-organising motivation is still alive today. Some have looked to Peirce's classification, and his work in logic more broadly, in the context of current attempts to enable computers to gain a semantic, rather than merely syntactic, understanding of their data (e.g. Sowa 2000; Legg 2013).

[3]Peirce was also interested in the task of classification in general. For instance, he spent a great amount of effort attempting to classify 'great men' (e.g. W5:26–106, 1884–1886), German philosophers (R1139, 1904), and 'amusements' (R1135, c. 1903). As Pietarinen notes, this last classification is supposed to be grafted on to the classification of practical sciences (Pietarinen 2006a, 135 n.9).

eventually reduce to physics. This motivation led to classifications which 'arrange the sciences into a sequence reflecting this reduction' (Kent 1987, p. 23). For instance, by showing that the objects of biology can be reduced to the objects of chemistry, which can in turn be reduced to the objects of physics.

One motivation that carries across these attempted classifications is the hope that we might discover some common features amongst the sciences or some kind of unity amongst their variety. In Baconian terms this unity could be made sense of in terms of the structure of the intellect which engages in science. This is what motivates the 'faculties' approach. The post-Newtonian proposals, on the other hand, worked out the unity of the sciences in terms of an underlying unity of nature as a physical system.

As Kent notes, Peirce attempted to base his study on close observation of the sciences as they were in his day and on the basis of his detailed 'firsthand knowledge of mathematics and several sciences' (Kent 1987, p. 16). This more empirical approach was pioneered by the French positivist Auguste Comte (Kent 1987, pp. 24–25). One motivation for this is to avoid setting up a philosophical story in advance, based either on the assumptions of a Newtonian metaphysic or some kind of faculty psychology. The sciences themselves would show their relations to one another. We will see later in this chapter that Peirce includes both an empirical study of scientific activity at his time and a study of first principles in the method he eventually employs for classifying the sciences.[4]

While Peirce's classification answers to motivations shared with his contemporaries, there are also some uniquely Peircean issues in play. That Peirce thinks the classification is important for his version of pragmatism is made clear in his late attempts to provide a proof of his pragmatic maxim.[5] The maxim, in its first-published and most well-known form, holds that in order to achieve the 'third grade of clarity' about a term of concept one should:

> 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. (W3:266/EP1:132, 1878)

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[4] A fuller examination of the specifically 19th century context of Peirce's work on the classification can be found in Ambrosio 2016.

[5] For a detailed account of Peirce's attempts to prove the maxim see Hookway 2000a and Hookway 2012b. A further account, focusing in particular on the mathematical aspects of the proof can be found in Pietarinen 2011.

It was not until 1898 that this maxim was connected in the public imagination with something called 'pragmatism'. This was the result of William James using the term, and crediting it to Peirce, in a public address at the University of California delivered in that year (Castell 1948, p. xiii).[6]

The new attention granted to Peirce and his maxim spurred him to further develop his own version of pragmatism and to distinguish it from others. In a letter to William James, having expressed his agreement that pragmatism is not merely important for philosophy, he sets out his conception of the key difference:

> But I seem to myself to be the sole depositary at present of the completely developed system, which all hangs together and cannot receive any proper presentation in fragments. My own view in 1877 was crude. Even when I gave my Cambridge lectures I had not really got to the bottom of it or seen the unity of the whole thing. It was not until after that that I obtained the proof that logic must be founded on ethics, of which it is a higher development. Even then, I was for some time so stupid as not to see that ethics rests in the same manner on a foundation of esthetics [...] (CP8.254, 1902)

Here Peirce refers to his defence of the maxim in the *Popular Science Monthly* in the late 1870's and his lectures delivered as part of the Cambridge Conferences series in 1898.[7] Peirce suggests that the key to his understanding the 'unity' of his form of pragmatism is his realisation of the hierarchical relationship between the three normative sciences: esthetics, ethics, and logic. That is, his late understanding of pragmatism depends on developments in his classification of the sciences.[8]

Peirce's letter to James also touches on one of the core areas of contention in the reception of Peirce's ideas. Peirce refers, with some exaggeration, to a 'completely developed system'. Elsewhere, we see him hoping 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. (EP1:247, 1887–1888)

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[6]An account of the status of the maxim in the span between 1878 and 1898 is given in: Leary 2009.

[7]The former are widely available, including in the *Essential Peirce* and *Writings* (W3:242–374/EP1:109–99, 1877–1888). They have recently been published as a single volume with supplementary material (ILS). The Cambridge Conferences lectures have been published as *Reasoning and the Logic of Things* (RLT). Two lectures from the series, 'Philosophy and the Conduct of Life' and 'The First Rule of Logic', are available at EP2:27–56.

[8]What Peirce has in mind here can be seen in his 1903 Harvard Pragmatism lectures, where he proceeds on the basis that 'if, as pragmatism teaches us, what we think is to be interpreted in terms of what we are prepared to do, then surely *logic*; or the doctrine of what we ought to think, must be an application of the doctrine of what we deliberately choose to do, which is Ethics' (EP2:142, 1903).

Peirce's pragmatism comes in the form of a 'system', or at least, in Anderson's phrase, a collection of 'strands of system' (Anderson 1995). Further, this system is closely associated with the classification. The importance of Peirce's systematic ambitions is a controversial issue amongst his readers.

Thomas Goudge's claim that Peirce's thought is divided into two distinct and conflicting strains, the 'transcendentalist' system builder and the 'naturalist', has been widely rejected as an interpretation of Peirce's project (c.f. Goudge 1950, pp. 5–7). However, some contemporary readers of Peirce attempt to derive insight from Peirce in a piecemeal fashion without concern for the more systematic articulation of his position. This is a perfectly acceptable way of proceeding if the aim is to cast light from Peirce on a single issue. Work in this vein includes Isaac Levi's account of inquiry as self-correcting (e.g. Levi 2012) or Cheryl Misak's more detailed exegesis and development of Peirce's account of truth (e.g. Misak 1991).[9] For this kind of work the classification is of secondary importance.[10]

Others, especially those more concerned with understanding Peirce's thought in its own terms, have made more of the classification. Douglas Anderson's *Strands of System* provides a good example of this variety of work (Anderson 1995).[11] It is also worth noting that it has been used as the organising principle of both the *Collected Papers* and the *Robin Catalogue*. Those interpreters particularly interested in understanding what Peirce means by his attempt to 'prove' pragmatism are similarly interested in the classification, for reasons that should already be evident.

The questions considered in this thesis are systematic ones. We are interested in the relationship between philosophy and the other sciences and in the status of metaphysics with respect to both the rest of philosophy and the other sciences. If we are to learn anything from Peirce about these issues, we will be learning from his attempts to put these various disciplines into systematic order.

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[9]In this, these philosophers resemble the American novelist Walker Percy, who described himself as a 'thief of Peirce' (Ketner and Percy 1995). By this he meant that he picked out particular ideas from Peirce without worrying too much about fitting them in with Peirce's other views. In Percy's case, the idea that he was attracted to was the three category ontology.

[10]It may be possible to take up the classification as an idea removed from the rest of Peirce's work. However, we will see as this thesis progresses that a number of Peircean philosophical claims are embedded in the classification. Consequently, it is hard to imagine a detailed understanding of the classification being developed without also developing a reasonably detailed understanding of Peirce's first-order philosophical work.

[11]An important early study in this vein, which presents a succession of 'systems' developed by Peirce can be found in Murphey 1993.

According to Kent, the motivating purpose of Peirce's classifications of the sciences was to generate a diagram of the 'conceivable effects' of the various theoretical disciplines, and especially logic, on one another. That is, the hierarchy is designed to reveal logic and the other sciences in their 'third grade of clearness' (Kent 1987, p. 54).[12] If Kent is right, then we should look to the hierarchy to clarify the role of any of the sciences which appear on it. As she puts it, one can '[p]ick a science, and Peirce's scheme should reveal it in its "third grade of clearness," its pragmatic meaning' (Kent 1987, p. 47).

Kent's interpretation of Peirce's approach to the hierarchy is evidenced by a close reading of all of the manuscripts related to his classification and its historical development. Without going into full detail, we can already see how this conception of the function of the classification connects with the specifically Peircean motivations and the wider 19th century background. Kent presents the hierarchy as not only motivated by an attempt to understand the grounds of the pragmatic maxim, but also as an expression of the maxim. It allows us to attain pragmatic clarity about the various disciplines. Kent's account also presents Peirce's classification as directed to the more widely shared concern with gaining a unified conception of the nature of science in general. The classification thus presents, in a characteristically pragmatist way, a general picture of the sciences.

Before turning to the classification itself, there is a further motivation to be considered. Murray Murphey notes that Peirce's evolutionary cosmology starts with the claim that any such metaphysical work should:

> first of all make a complete survey of human knowledge, should take note of all the valuable ideas in each branch of science, should observe in just what respect each has been successful and where it has failed, in order that in the light of the thorough acquaintance so attained of the available materials for a philosophical theory and of the nature and strength of each, he may proceed to the study of what the problem of philosophy consists in, and of the proper way of solving it. (W8:99/EP1:286, 1891[13])

Murphey suggests that this reveals the impetus for Peirce's work on the classification (Murphey 1993, pp. 229-330).[14] On this view, the classification helps us

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[12]The third grade of clarity is the grade which is attained by application of the pragmatic maxim. We achieve the third grade of clarity when we go beyond mere familiarity with a concept and the possession of an abstract definition, to an understanding of the possible practical effects of the application of the concept (W3:271/EP1:136, 1878).

[13]The date given here and in EP is the publication date. The date given in W is the date of composition. I will prioritise publication dates whenever possible.

[14]This interpretation seems particularly apt for the 'retrospective sciences' or 'sciences of review', which we will consider later in this chapter (§2.2).

to understand where to find the materials for our philosophical inquiries, and in what manner these materials should influence philosophy.

The task that Murphey sets out for the classification is compatible with the approach I am taking from Kent. Kent holds that the classification provides an important part of the pragmatic clarification of the meaning of the classified sciences. This does not conflict with the idea that it also helps to show what one needs to know in order to produce good philosophical hypotheses.[15] The kind of project Murphey points to may be aided by pragmatic clarity about the discipline in which one is attempting to work. Kent suggests as much herself. She suggests that, with the classification and hierarchy in hand, '[s]cientists would have at their disposal clear indications of where to seek solutions to their problems' (Kent 1987, p. 47). This seems especially true of areas of inquiry whose nature remains contested. Philosophy, and especially metaphysics, is an example of this if anything is.

1.2   The 'Perennial' Form

According to Kent, Peirce's classification achieves its 'perennial' form by 1903. This final form of the classification is presented in the pamphlet *A Syllabus of Certain Topics of Logic*, which was produced to accompany his Lowell lectures (Kent 1987, p. 121).[16]

The post-1902 classification divides the sciences in three branches: theoretical, practical, and retrospective. The theoretical branch of the sciences is presented below (Figure 1).[17]

According to Peirce, the sciences depicted in the classification are to be understood as domains of activity of communities of inquiry motivated by the desire for

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[15]Kent and Murphey do differ over some important issues concerning the role of Peirce's categories in the hierarchy. In particular, Murphy highlights the role of Peirce's categories and presents the inclusion of 'phenomenology' as a somewhat *ad hoc* response to the fact that his division of the normative sciences depends on the categories. The basic idea is that if some division of the hierarchy relies on the categories then the discipline which establishes the categories must be superordinate to it (Murphey 1993, pp. 366-7). For Kent's arguments against Murphey and Elizabeth Flower see Kent 1987, pp. 41–42, 120. Relatedly, some take the final form of Peirce's classification to be the result of a 'systematic application' of the categories (Atkins 2006).

[16]The first of Peirce's attempts at classification that Kent considers was developed in the 1860's (Kent 1987, pp. 90–91). The step which brings the hierarchy into its final form is Peirce's recognition of all three normative sciences: esthetics, ethics, and logic. After 1903 there are only minor changes in content and terminology.

[17]For the version of the hierarchy given below see: CP1.180-202, 1903; EP2:258–262, 1903; and Kent 1987, pp. 134–135. This could be given with more or less detail. I have included a few examples of each variety of 'idioscopy', since a few of these will come up in the following discussion.

Figure 1: The Perennial Classification

1. Mathematics ('Schematoscopy')

2. Philosophy ('Cenoscopy')

   a) Phenomenology
   b) Normative Science
      i. Esthetics
      ii. Ethics
      iii. Logic
   c) Metaphysics

3. Special Sciences ('Idioscopy')
   (a) Nomological Physics
      (i)   Molar Physics
      (ii) Molecular Physics
      (iii) Ethereal Physics
   (b) Classificatory Physics
      (i)   Crystallography
      (ii) Chemistry
      (iii) Biology
   (c) Descriptive Physics
      (i)   Geognosy
      (ii) Astronomy

   (a) Nomological Psychics
      (i)   Introspective Psychology
      (ii) Experimental Psychology
      (iii) Physiological Psychology
      (iv) Child Psychology
   (b) Classificatory Psychics
      (i)   Special Psychology
      (ii) Linguistics
      (iii) Ethnology
   (c) Descriptive Psychics
      (i)   History
      (ii) Biography
      (iii) Criticism

truth (EP2:131, 1902). The sciences, at least when healthy, can be picked out by looking at the output of such groups. In one place, Peirce suggests one need only look at a list of the titles of scientific journals in order to see the natural divisions into which the sciences fall (EP2:131–2, 1902). So, for instance, if we were to display the hierarchy in more detail we would see, for instance, various forms of chemistry under the heading 'classificatory physics'. In the next section I will consider Peirce's conception of science at more length.

The central relationship depicted by the hierarchy is the provision of principles. A superordinate science provides (or can rightly provide) principles to subordinate sciences.[18] So, within philosophy we find esthetics giving principles to ethics, which in turn gives principles to logic. Or, between philosophy and the special sciences

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[18]The hierarchy is thus set out in terms of a kind of methodological relationship between sciences. This methodological relationship might later be explained in metaphysical terms (e.g. in

we see metaphysics providing principles to the 'nomological' forms of physics or psychics.[19]

While the hierarchy is designed to present relationships of principle dependence and provision, it collaterally depicts the further relations of data and suggestion provision. So, for instance, results in physics might form the basis for a generalisation in metaphysics. This would be a form of 'data provision'. Physics might also provide metaphysics with suggestions as to methods to apply or problems to solve. In Peirce's work this happens when he applies the methods of statistical mechanics to attempt a metaphysical account of the development of the laws of nature. All three forms of relationship depicted in the hierarchy will be presented in more detail in Section Three.

2   Peirce's Conception of the Sciences

2.1   The Spirit of Science

According to Peirce, science cannot be characterised in terms of any particular method or any established collection of results. Rather, Peirce characterises science in terms of the 'spirit' of its practitioners and of the communities that share that spirit. According to Peirce, '[s]cience consists in actually drawing the bow upon truth, with intentness in the eye, with energy in the arm' (EP2:131, 1902).[20] Detailed discussion of the notion of 'truth' that is involved here will be deferred to Chapter Three. For our present purposes, it is enough to appeal to Peirce's earlier characterisation of science in 'Fixation of Belief', according to which the scientific conception of truth is the view that we can develop stable beliefs that are not merely the result of personal tenacity, appeals to authority, or the vagaries

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terms of the generality of the objects of the given science). But the hierarchy *starts* with methodological relationships.

[19]I will follow Peirce in using 'special sciences' to refer to all of the natural and social sciences. This diverges slightly from contemporary usage, which distinguishes, e.g. 'fundamental physics' from the special sciences (e.g. Fodor 1974). On Peirce's usage, fundamental physics is a special science too (although it may in places 'merge with' metaphysics, which is part of philosophy (e.g. EP2:39, 1898)).

[20]This quote, and much of the discussion that follows, is derived from a text from 1902 on classification in general and the classification of the sciences in particular. Even though the hierarchy was not in its final form in this text, Peirce had mostly settled on his methodology for classifying and ordering the sciences. Consequently, introducing this earlier text will not lead us astray (c.f. Kent 1987, p. 114). The text is entitled 'A Detailed Classification of the Sciences' in *Collected Papers* (CP1.203–283), and the early sections are published as 'On Science and Natural Classes' in *Essential Peirce* (W3:253/EP2:115–132).

of fashion, but rather, are attributable to 'some external permanency' (EP1:120, 1877).[21]

Peirce's appeal to the spirit of science comes after he rejects a characterisation of science in terms of some particular method or some collection of established results. Science cannot be characterised in terms of its method, because 'the method of science is itself a scientific result' (CP6.428, 1893). Elsewhere, he says that the 'one thing even more vital to science than intelligent methods [is] the sincere desire to find out the truth, whatever it may be' (CP5.84, 1903). That is, the spirit of science is more important for science than the methods themselves. Whatever the scientific method is, Peirce does not take it to be something that is necessary for science to get off the ground. In fact, Peirce entertains the thought that our methods may become continually 'more scientific' (e.g. CP5.565, 1901). Peirce thus rejects the view that there is one trans-historical scientific method which one either possesses or doesn't and which is a definitive mark of whether a given cultural practice is a science.[22]

Peirce rejects the idea that a method is the essence of science by arguing that it is itself a product of science. Peirce's use of the example of chemistry in 'The Fixation of Belief' provides a sense of what he means here. Peirce claims that 'each chief step in science has been a lesson in logic' (W3:243–244/EP1:111, 1877). In the history of chemistry such a step was taken by Lavoisier:

> The old chemist's maxim had been, *'Lege, lege, lege, labora, ora, et relege'*.[23] Lavoisier's method was not to read and pray, not to dream that some long and complicated chemical process would have a certain effect, to put it into practice with dull patience, after its inevitable failure to dream that with some modification it would have another result, and to end by publishing the last dream as a fact: his way was to carry his mind into his laboratory, and to make of his alembics and cucurbits instruments of thought, giving a new conception of reasoning, as something which was to be done with one's eyes open, by manipulating real things instead of words and fancies. (W3:243–244/EP1:111, 1877)

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[21]The process by which one comes to think that such a fixation is both possible and worthy of being attempted is described by Peirce in quite religious language. We find him offering a diagnosis of those without a sense of 'Truth' as an idea with 'infinite vitality'. Such people are like those who 'have not a sense of sin', and must, consequently 'be born again and become as a little child'. If you are in such a position, then 'you have to look upon the world with new eyes' (EP2:123, 1902). This conversion is also described in terms of being 'seized' (EP2:130, 1902) with the desire to 'look Truth in the face' (EP2:375, 1906; see also EP2:61, 1901).

[22]Peirce attributes such a view to Francis Bacon who, Peirce claims, thought that 'in a few years physical science would be finished up' if we just applied the right rules (W3:243/EP1:110, 1877).

[23]'Read, read, read, work, pray, and read again'.

There are a few developments that could be highlighted in this passage. One of the more interesting is a blurring between the 'context of discovery' and the 'context of justification'. Chemists (and scientists in general) are presented in this passage as having abandoned the method that separates the theory building phase from the testing phase. Lavoisier's method attaches the development of hypotheses more intimately to his equipment for testing them.[24] The imagination is here tethered more closely to the 'external permanencies' which the scientist is confronted with in the laboratory.

The relation between the spirit and the methods of science is clearly set out in the following passage:

> That which constitutes science, then, is not so much correct conclusions, as it is a correct method. But the method of science is itself a scientific result. It did not spring out of the brain of a beginner: it was a historic attainment and a scientific achievement. So that not even this method ought to be regarded as essential to the beginnings of science. That which is essential, however, is the scientific spirit, which is determined not to rest satisfied with existing opinions, but to press on to the real truth of nature. To science once enthroned in this sense, among any people, science in every other sense is heir apparent. (CP6.428, 1893)

Peirce also rejects the view that science can be characterised by any collection of systematised knowledge. He attributes the view that science is systematised knowledge to Samuel Taylor Coleridge, especially in Coleridge's introduction to the *Encyclopaedia Metropolitana* (EP2:372, 1906). The problem with this proposal is that we can easily imagine situations in which some collection of true propositions is assented to, and perhaps even often consulted, but where there is no connection between these propositions and the practices by which they can be tested and developed. Such a collection of systematised knowledge would be simply 'dead memory' (CP6.428, 1893).

Peirce notes that one can be a 'man of science' even if one has completely inadequate methods and entirely false results. He offers Ptolemaic astronomy as such a case (CP6.428, 1893). In so far as Ptolemy and his followers were proceeding by what they took to be the best methods available, and were deploying them sincerely, then they posses the 'spirit of science' (c.f. W4:378–379/EP1:211, 1882). However, their status as scientists would be much harder to make sense of if science is characterised in terms of methods or results.

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[24]Peirce does not use this term, but he can be understood as advocating the use of 'exploratory experimentation' (c.f. Waters 2007). This kind of experimentation proceeds without any clear idea concerning what will be found, and hopes to come out at the other end with a better idea about what kind of hypothesis to test.

While methods or results are not the essence of science, possession of the spirit of science has important consequences for the methods you adopt and your attitude to the results of previous scientific inquiry. For instance, an important knock on effect of the 'spirit of science' is the careful consideration of the work of others in your area and of the adoption and development of the best available methods (EP2:130, 1902). As we saw above, Peirce takes scientific methods to be the 'heir apparent' of the spirit of science. To neglect to select the best methods available is a sign that you do not have the true spirit of science. On this view 'if a man pursues a futile method through neglect to inform himself of effective methods, he is no scientific man; he has not been moved by an intelligently sincere and effective desire to learn' (EP2:130, 1902).

An important dimension of this story is that the 'scientific spirit' realizes early on that its aim, truth, is not achievable by any finite individual. In a famous early passage, Peirce says that 'the very origin of the conception of reality shows that this conception essentially involves the notion of a COMMUNITY, without definite limits, and capable of an indefinite increase of knowledge' (W2:239/EP1.52, 1868). Combining this with the notion of an 'external permanency' from 'Fixation of Belief', the claim is that the attempt to fix our beliefs in terms of something external is a project which is essentially social.

Kent summarises Peirce's conception of science as follows: 'Peirce proceeded to use the word "science" in the sense of the collective and co-operative activity of all persons and any group of persons whose lives are animated by the desire to find out the truth' (Kent 1987, p. 81). This closely echoes Peirce's own characterisation of (theoretical) science as

> the total activity of a social group whose members devote their whole being to finding out and to helping one another to find out the truth in a certain department into which they are peculiarly equipped to search; and are doing this for no ulterior object whatsoever beyond that of making the holy truth known; and who are in substantial accord as to the general method proper for prosecuting such inquiries, and as to what has, in fact, already been discovered in their field. (EP2:459, 1911)

We are now in a position to see that to take philosophy to be a science does not require us to take philosophy to deploy the methods or results of any particular special science. Nor does it require us to subordinate philosophy to physics in our metaphysics, or to psychology in our logic and epistemology. All it requires is the adoption of the spirit of science: active directedness to truth.[25]

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[25]As Susan Haack puts it, 'it would be a misunderstanding to think of Peirce's aspiration to make philosophy scientific as in any way scientistic; Peirce expressly denies that philosophical

2.2   Theoretical/Retrospective/Practical

The version of the classification presented above covered only the theoretical sciences. But Peirce takes there to be two other varieties of science: practical and retrospective. While we have already seen that all sciences are characterised by their orientation to the truth, the theoretical sciences are those sciences which have truth as their *ultimate* aim. A theoretical scientist seeks the truth for its own sake. A practical scientist on the other hand seeks truths in order that they might be used to achieve some ulterior, practical, motive (e.g. NM4:191, 1904). In a similar formulation, the theoretical sciences concern the attempt to discover 'such truth as seems to [the scientist to be] highly worthy of life-long devotion', while the 'science[s] which [differ] from this in all the important respects which result from investigation being pursued, not because of the august nature of the truth sought, but for the sake of some anticipated utility of it to some man or men' are practical sciences (EP2:372, 1906). We will turn to the retrospective sciences in a moment.

Peirce produced a few lists of the 'motley crowd' of practical sciences, but they never achieved the level of clarity or systematicity obtained in his classification of the theoretical sciences. One list is as follows: 'pedagogics, gold-beating, etiquette, pigeon-fancying, vulgar arithmetic, horology, surveying, navigation, telegraphy, printing, bookbinding, paper-making, deciphering, ink-making, librarian's work, engraving, etc' (CP1.243, 1902). Peirce elsewhere claims that he has made a list of 'upwards of three hundred different sciences ranging from such general psychical sciences as ethics, religion, law, to gold beating, cooking, charcoal burning, and so forth' (EP2:37, 1898).[26]

Some interpreters have taken these lists to be evidence that Peirce is dismissive of the practical sciences. For instance, the inclusion of 'pigeon-fancying' alongside the theory of education ('pedagogics') suggests to some that important studies are being lumped in with the obviously ridiculous.[27] This is unfair. Rather than taking the inclusion of pigeon-fancying to be a mark of disrespect, we should instead be impressed by the breadth of Peirce's own interests. Many of the items on his lists of practical sciences are endeavours that he participated in. For instance, he put a great deal of work in to questions of education. This work included mathematical

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issues could be resolved within, and certainly never suggests that philosophy ought to be replaced by, the natural sciences' (Haack 2003, p. 776).

[26] Peirce's manuscripts include a few examples of this kind of work (e.g. R1135, c. 1903).

[27] For instance, Hickman complains that the inclusion of pigeon-fancying makes technology a 'comic inferior' to theoretical science (Hickman 1986, pp. 183–184).

lessons for children (e.g. NM1:1–120, various dates) and even, briefly, the planning of elocution lessons for seminarians (Johnson 2006). He also worked, for many years, on issues of surveying with the Coast and Geodetic Survey.

We need not think of 'motley' as having negative connotations here. It is certainly the case that Peirce thinks of theoretical science as a particularly noble vocation. He says, for instance, that 'man's proper function' is to 'embody general ideas in art-creations, in utilities, and above all in theoretical cognition' (EP2:443, 1908). Many pragmatists will baulk at this normative claim. However, returning to the list just given, the distinction between theoretical and practical sciences can still be made without it. Consider, for instance, surveying. In this case the end towards which any truths are discovered is typically some advance in map-making. The success of our surveying will ultimately be measured in so far as the maps made on the basis of our surveying live up to their purposes. To determine whether a science is theoretical or practical, we need to consider the 'ultimate aim' of the research.

This account of the practical sciences does not sit entirely comfortably with what we have just seen of the spirit of science. We might think that only those disciplines for which truth is the *ultimate* aim really possess the spirit of science. It should not be surprising that this worry comes up. Peirce's discussions of the spirit of science are primarily concerned with articulating the attitude of the theoretical inquirer, rather than the practical inquirer. The quasi-religious language used above for those who wish to 'look Truth in the face', or to 'draw the bow upon truth with intentness in the eye, with energy in the arm', all suggests an orientation towards truth for its own sake. But even if Peirce's articulations of the spirit of science tend towards the theoretical sciences, the notion is not thereby inapplicable to the practical sciences. Scientific inquiry is activity directed towards truth. That someone engages in inquiry with some further purpose in mind does not mean that they cease to be directed towards truth. The most we could be entitled to here is that their directedness towards truth is imperfect.[28]

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[28]It is important to note in passing that earlier work by Peirce is much more damning of the practical inquirer. For instance, in 1898 he suggests that the orientation towards truth and the orientation towards practical ends are ultimately incompatible: '[I]t is notoriously true that into whatever you do not put your whole heart and soul, in that you will not have much success. Now the two masters, *theory* and *practice*, you cannot serve' (EP2:34, 1898). He goes on to set out the problem with practical science in strikingly moralistic terms:

> Do you think that the physiologist who cuts up a dog reflects, while doing so, that he may be saving a human life? Nonsense. If he did, it would spoil him for a scientific man; and then the vivisection would become a crime. However, in physiology and in chemistry, the man whose brain is occupied with utilities, though he

An example may help to make these distinctions out. Let's say there are two researchers working on yeast biology in the same laboratory. Now suppose they manage to engineer some particularly fast-acting yeast which has important consequences for the baking industry. One of our researchers now leaves the lab, patents this new yeast variety, and starts a lucrative baking business. This researcher ceases to inquire, their beliefs about yeast biology are good enough for their purposes. The other, however, stays in the lab and continues to ask further questions about yeast, perhaps looking into the causes of the faster action in more detail. In the course of this, they might end up investigating completely commercially useless strains. In this case both researches can be credited, at least initially, with the spirit of science. They both aimed to discover some truth. The second researcher is a theoretical scientist, since this researcher aims at the truth for its own sake. The former was a practical scientist, but, upon achieving the practical aim which they were working towards they ceased to be any kind of scientist. They may, of course, become a practical scientist again in the future. Perhaps some further problem will come up in their bakery which requires the discovery of some new truth.[29]

The precise function of the retrospective sciences, or 'sciences of review', is less clear. According to the 1903 classification these sciences are 'the business of those who occupy themselves with arranging the results of discovery, beginning with digests and going on to endeavor to form a philosophy of science' (EP2:258–259, 1903). According to Peirce, the classification of the sciences itself belongs to this kind of science (EP2:258–259, 1903). Later, Peirce characterises these sciences as 'systematized knowledge' (EP2:372, 1906). He then suggests that one sense of the

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will not do much for science, may do a great deal for human life. But in philosophy, touching as it does upon matters which are, and ought to be, sacred to us, the investigator who does not stand aloof from all intent to make practical applications will not only obstruct the advance of the pure science, but, what is infinitely worse, he will endanger his own moral integrity and that of his readers. (EP2:29, 1898)

This anti-practical aspect of Peirce's thought continues into the work we are considering in this chapter, albeit in a more tempered form.

[29]My interpretation of Peirce's distinction between theoretical and practical inquiry differs from Cooke's. Cooke takes the distinction to be one of the degree to which we allow the results of theoretical and practical inquiry to affect our conduct. The less directly action guiding, the more theoretical (Cooke 2006, pp. 67–69). While this is usually true, it is a difference which stems from the more fundamental distinction between the ultimate purpose of the two kinds of science. Theoretical science does not inquire into truth *in order to* achieve ulterior ends. Cooke entertains the thought that the distinction could be drawn on the basis of distinct 'goals', where theory aims at truth and practice aims at something else (Cooke 2006, p. 69). However, on this account both theory and practice aim at truth. The difference is whether truth is their *ultimate* aim or not. This distinction is important, since practical ends can distort theoretical inquiry, and the results of inquiry dedicated exclusively to discovering the truth may not be appropriately applied in practice (c.f. Atkins 2016).

term 'philosophy' is *'philosophia ultima'*, which '[embraces] all that truth which is derivable by collating the results of the different special sciences, but which is too broad to be established by any one of them' (EP2:372, 1906).[30]

According to Kent, both the sciences of review and theoretical logic have a role to play in the task of classifying the sciences (Kent 1987, p. 18). The sciences of review provide an account of what is actual, and discern any patterns that can be found in the relationships between the sciences as practices and any patterns in the results which they produce. This is the more directly 'empirical' phase of building the classification. The role of theoretical logic is to determine the underlying principles which govern a 'natural classification' of the sciences (Kent 1987, pp. 48–50). In Peirce's view, the underlying principle here is the provision of principles from one science to another.

Aside from their role in the classification of the sciences, Kent also notes that the sciences of review can 'generalize and criticize' the 'fragmented discoveries' of the various theoretical sciences, and 'collect, arrange, and digest them into handbooks' (Kent 1987, p. 188). Peirce's examples of such work include: Comte's *Cours de philosopie positive*, Spencer's *System of Synthetic Philosophy*, and the work of Whewell (Kent 1987, pp. 145, 188; EP2:373, 1906; EP2:458, 1911).[31] Aside from generalising and criticising the work of the theoretical scientist, such digests enable the results of the theoretical sciences to be applied in the practical sciences and in other theoretical sciences.[32] That is, they enable the provision of suggestions between sciences. Perhaps, this is the kind of work that Peirce has in mind when he suggests that in order for a result of a theoretical science to be made use of in practice we have to make the 'extra-scientific'[33] judgement that 'this ground has held a long time without showing signs of yielding' (EP2:55, 1898). In so far as they play this kind of role, the sciences of review are also directed to the truth, and thus share in the spirit which Peirce takes to be definitive of science.

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[30]*Philosophia ultima* is then said to be 'at the head of the Retrospective Sciences', which is another term Peirce uses for the sciences of review (EP2:373, 1906).

[31]Note the similarity of this list with the list of the predecessors to Peirce's classification. This, additionally, suggests that the sciences of review have a lot to do with the task of classifying the sciences.

[32]The idea that the sciences of review mediate between the theoretical and practical sciences is due to Maryann Ayim (Ayim 1981, p. 46).

[33]In this text, Peirce uses the term 'science' to refer to those practices which have truth as their ultimate aim. That is, he uses 'science' to refer to what he later specifies as the 'theoretical sciences'. So here we could replace 'extra-scientific' with 'extra-theoretical'.

2.3   Schematoscopic/Cenoscopic/Idioscopic

In the depiction of the classification offered above, the first three divisions of the theoretical sciences are labelled 'schematoscopy', 'cenoscopy', and 'idioscopy'. The suffix '-scopy' indicates that the commonality between all four varieties of theoretical science is that they observe. In the case of schematoscopy, a term that Peirce occasionally uses to refer to mathematics, what is observed are 'schemata', or 'skeleton diagrams' (CP2.148, 1902).[34] Cenoscopy observes the 'ceno-', which comes *via* the Greek *koine*, and means the 'common'. That is, cenoscopy is the theoretical science that observes that which is commonly available. Finally, idioscopy observes the 'idio-', from the Greek for special or unique. It is the theoretical science which makes special observations. It is worth getting a little more clear about this distinction, especially as it pertains to cenoscopy and idioscopy, before turning to why Peirce thinks all theoretical sciences should be thought of as observational.

Peirce endorses the scholastic maxim '*nihil est in intellectu quin prius fuerit in sensu*',[35] which he glosses as the claim that 'there are no conceptions which are not given to us in perceptual judgments, so that we may say that all ideas are perceptual ideas' (EP2:223; 226, 1903). This applies equally to mathematical, philosophical, and special-scientific conceptions, so all earn the right to their Peircean neologisms with the suffix '-scopy'. Peirce's own defence of the maxim runs through his account of perception as a limiting case of abduction and as able to provide access to general ideas as well as particular objects (c.f. EP2:229–233, 1903).[36]

Following this path would take us far from the aim of this chapter. However, a suggestion in Peirce's favour can be made using the resources we already have at hand. We have seen that the 'spirit of science' requires inquiry to be directed towards truth and that, in the theoretical sciences, truth is the ultimate aim. We have also seen that the notion of truth that goes along with scientific inquiry is one in which all our beliefs are to be fixed by some 'external permanency'. The

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[34]Peirce almost never uses the term 'schematoscopy', I've taken it up for the sake of symmetry (Kent 1987, p. 205). This is not to say that he only briefly thought of mathematics as observational. This aspect of Peirce has been widely discussed (e.g. Carter 2014; Campos 2007; Shin 2002; Hull 1994).

[35]'Nothing is in the intellect which was not first in the senses'.

[36]For accounts of Peirce on perception see: Legg 2014b;Wilson 2012; Rosenthal 2004; and Almeder 1970.

processes by which this fixation is achieved will all require some relation to this 'external permanency' which may as well be labelled 'observation'.[37]

The observations made by these three divisions of the theoretical sciences are arranged in order of generality. The observations that idioscopy draws on are only available to observers in peculiar or special circumstances. We can easily imagine, for instance, observers who have no access to the results of experiments in the Large Hadron Collider or similar experimental apparatuses. Cenoscopy, on the other hand, derives its results from observations available to any possible inquirer. We might think, for instance, that no possible inquirer could observe the world to be irregular in all respects. That is, a purely chaotic world could not sustain any possible inquirer. This rules out the possibility of any inquirer having observations of a certain character. Finally, schematoscopy makes observations of pure possibility *via* experimentation with diagrams. Mathematics can consider what would happen in situations in which no possible observer was present.

The three varieties of '-scopy' here are kinds of theoretical science. The question arises whether the suffix '-scopy' could also be used to label varieties of practical and retrospective sciences. Peirce's defence of the maxim that all conceptions are given the senses suggests that any science could be labelled in this way. However, there are some reasons to doubt this. For the practical sciences, where the ability to achieve some ulterior end is pre-eminent, the achievement of that end is the mark of success. This enables a greater role in practical inquiry for instinct, or 'practical wisdom', of the sort which need not be justified by anything other than our success at achieving the relevant end. In the theoretical sciences, on the other hand, there is a greater need to be aware of how and why our activity works. That is, while all conceptions are given in the senses, the theoretical sciences have a greater need to be able to point to specific observational phenomena in order to back up their ideas. At the 'results' end, rather than the observation end, of inquiry we can also draw a distinction. Theoretical science has no ultimate aim beyond discovery and is only practical insofar as experimental intervention is necessary for discovery. Theoretical seeks to observe the world, rather than to change it. Practical science on the other hand observes the world only in order to change it (c.f. EP2:304, 1904). The suffix '-scopy' is thus more appropriate for labelling theoretical sciences than practical sciences.

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[37]Making sense of the idea of an external permanacy will be an important task in later chapters.

3 Relations Between Sciences

Peirce credits Comte with the recognition that the sciences can be organised in terms of principle-dependence, where 'one science depends upon another for fundamental principles, but does not furnish such principles to that other' (EP2:258, 1903).[38] Peirce organises his hierarchy according to principle-provision. But this does not prevent other relations from being displayed by it. For instance, subordinate sciences can provide 'suggestions' and 'data' to superordinate sciences.[39]

 Both sets of relations are important for the hierarchy. Taking as an example the topic of the next chapter, the relationship between philosophy and the special sciences, we can see that both directions in the hierarchical relationship must be accounted for. In this case, the fact that philosophy provides principles to the special sciences does not mean that it has no use for, or recourse to, the results of the special sciences. In fact, philosophy carried out entirely independently of the results of the special sciences will, Peirce thinks, fail to advance as successfully as it might. I will consider each set of relations in turn.

3.1 Dependence for Principles

The laws of physics are supposed to apply to all physical objects. Biological laws, if there are any, should apply to any living thing. Metaphysical laws, if there are any, should apply to any possible reality. The laws of physics need not apply in other possible worlds, and the laws of biology do not apply to inanimate objects like rocks or abstract objects like the natural numbers. These simple observations provide the motivation for the idea of arranging sciences in terms of principle

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[38]Comte's principle is set out in *Cours de Philosophie Positive* as derived from the phenomena studied by the respective sciences. Where one science studies phenomena that are more general, or more abstract, than another it appears higher in the hierarchy (Comte 1896, pp. 26–27). Kent shows how Peirce derived his conception of 'principle dependence' from this Comtean foundation (e.g. Kent 1987, p. 90). One way that he moves from the Comtean claim about the abstractness or generality of the objects of the respective sciences to the provision of principles is to note that 'if anything is true of a whole genus of objects, this truth may be adopted as a principle in studying every species of that genus' (CP3.427, 1896; cited in Kent 1987, p. 93). In a late paper he sets out the principle dependence relationships of the special sciences as deriving from the fact that the nomological sciences study laws, the classificatory sciences, kinds, and the descriptive sciences individual objects (EP2:458, 1911).

[39]One can slightly complicate this arrangement by following Kent in thinking that the practical sciences and the sciences of review are 'parallel' to the theoretical sciences. On this picture, suggestions can also pass 'horizontally' in the hierarchy (c.f. Kent 1987, p. 47). For instance, practical ethics might 'take suggestions' from theoretical ethics, or the practical science of engineering may do the same from chemistry or geology.

dependence. The biologist can take for granted that the laws of physics hold good. The biologist and the physicist, whether they like it or not, must assume that some metaphysical laws hold good. However, the physicist ought not take the laws of biology for granted when studying quarks. On this picture, metaphysics provides principles to both biology and physics and physics provides principles to biology. We need not assume that 'principles' are always 'laws'. A principle is just a result that can be taken for granted as applying to whatever objects we are studying.

Some examples from the hierarchy will help to make the principle-dependence relationship clear. Idioscopy is divided horizontally into physical and psychical branches and vertically into nomological, classificatory, and descriptive branches. Peirce provides a compact summary of the latter division as it occurs on the physical branch of idioscopy:

> Nomological Physics discovers the ubiquitous phenomena of the physical universe, formulates their laws, and measures their constants. It draws upon metaphysics and upon mathematics for principles. Classificatory Physics describes and classifies physical forms and seeks to explain them by the laws discovered by nomological physics with which it ultimately tends to coalesce. Descriptive Physics describes individual objects,—the Earth and the Heavens,—endeavors to explain their phenomena by the principles of nomological and classificatory physics, and tends ultimately itself to become classificatory. (EP2:259, 1903)

As well as presenting the basic structure of the physical sciences, this passage also reveals some of the dynamics of the hierarchy. Sciences, Peirce suggests, have a tendency to move 'up the hierarchy'. Descriptive sciences may become classificatory, and classificatory sciences may become nomological.[40]

For example, Peirce suggests that the work of William Herschel has made significant progress in transforming astronomy from a descriptive into a classificatory science (EP2:39, 1898). In a review of a biography of Herschel, Peirce says that '[b]efore Herschel the Great, astronomy had consisted almost exclusively in measuring the positions of stars at different times relative to one another and to the earth, and in searching out and testing hypotheses to explain their motions' (PW:P00783.72, 1901). The 'new astronomy', on the other hand, 'applies photometry, photography, spectroscopy, bolometry, polariscopy, and physics generally, to the study of the physical universe' (PW:P00783.72, 1901). Technologies of this sort enabled astronomers to apply the principles of chemistry and physics and gain classificatory insight into the various possible kinds of astronomical body. To be

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[40]These dynamics will be considered in more detail in Section 4.2, where we consider the extent to which Peirce's proposal is reductionist.

able to move from reporting the features of actual planets and stars to being able to see that a certain kind of astronomical body must be in a certain place requires a wider understanding of the space of possibilities than that possible in a merely descriptive science.

A more straightforward example of principle provision can be found in the relationship between chemistry and geology. Peirce takes the former to be one of the classificatory sciences and the latter to be a descriptive science (e.g. EP2:36–37, 1898). Chemistry, as one of the classificatory physical sciences, is supposed to deploy the results of nomological physics and mathematics to attempt to classify features of the physical world. Peirce presents Mendeleev's development of the periodic table as an example of this kind of work (e.g. CP1.259–260, 1902; CP5.469, c. 1907).[41]

Mendeleev's work deploys both mathematics and the laws of physics to attempt to classify all possible elements (including some that were not yet encountered). This move beyond describing those elements which we have acquaintance with into a more systematic study of the possible kinds of element is a characteristically classificatory move.[42] Compared to the universal laws discovered by the nomological sciences, the regularities of the classificatory sciences tend to require a great deal more by way of observations, and less by way of antecedent theory. The regularities may be subject to unsystematic exceptions, and not be, like the Peircean ideal for a law of nature, consonant with the 'natural light of reason' (CP7.84, 1902). That is, they might be quite unintuitive.[43] The periodic table is paradigmatically classificatory in so far an it enabled predictions of the behaviour of as-yet-undiscovered elements on the basis of their position in the classification.

Geology, on the other hand, concerns a particular object: the earth and its processes. This places it nicely within the descriptive sciences. The discovery of some of these processes, for instance continental drift, will depend largely on having a

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[41]The date for CP5.469 is given in the editorial note at EP2:398.

[42]An interesting, critical, discussion of the limitations of Mendeleev's arrangement of the occurs at EP2:110-111 (1901).

[43]Mendeleev's work in chemistry discovered a periodic law in the behaviour of chemical elements. That is, a law according to which behaviours reappear with a certain frequency when the objects in question are ordered. Peirce notes that this kind of law is very hard to establish, and suggests that it is almost pure induction (PW:P00641.424, 1897). Our abductive capacities do not naturally come up with laws of this sort. That is, they aren't in tune with the 'natural light of reason'.

good understanding of the underlying basic physics (CP7.85, 1902).[44] Some geological work will also depend on chemistry. For instance, when explaining how various kinds of rock and mineral are produced in the earth the geologist will make use of chemical classifications. A direct application of the periodic table to geology can be found in the Goldschmidt classification, which sets out the elements according to whether they tend to be found in rock, ore, iron, gas, or liquid (Goldschmidt 1937).[45] The geologist, when engaged in this research, takes for granted the results of the chemist.

The same principle-dependence structure applies within philosophy. For instance, Peirce takes logic to be principle-dependent on ethics. We've seen that this relationship is an important feature of the systematic articulation of his own form of pragmatism. Since thought, according to Peirce's pragmatism, is to be understood as a kind of action, then any principles which apply to action in general will equally apply to thought. One principle from ethics, which is applied in Peirce's logic, is that any action which cannot be controlled is beyond criticism (Kent 1987, p. 172). This principle is deployed in Peirce's late Monist articles, where he argues for the logical thesis that uncontrollable beliefs and inferences are 'acritical' (EP2:347, 1905).[46] The next chapter will show that this dependence is also important for understanding truth as the ultimate aim of inferential action.

Finally, principles cannot be shared 'laterally'. That is, two sciences on the same level of the hierarchy cannot provide principles to one another. For instance, a family of nomological physics and one of nomological psychics cannot provide principles to one another. Peirce notes that such a situation would be unstable, since, having constant need to consult one another, the scientists involved would become part of a single research project. That is, on the social account of the sciences outlined in the previous section, they would become one and the same science. Additionally, according to Peirce, the objects that a science studies are just the objects that its conclusions hold good for (R693a.58–60 1904; cited in Kent 1987, p. 123). So, a superordinate science must include the objects of a subordinate science. However, if this relationship goes both ways, then the objects of the two sciences are

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[44]Here, Peirce suggests that the geologist requires an understanding of the laws of physics in order to understand the 'cycles through which continents commonly pass'.

[45]These developments occurred after Peirce's death in 1914. I suspect he would take it to be evidence for his claim that the descriptive sciences tend to become classificatory.

[46]The 'late Monist articles' are a further attempt to present his form of pragmatism, there rechristened 'pragmaticism', in systematic form (c.f. EP2:334–335, 1905). These articles are distinct from the more well known 'Monist Metaphysics Series' (W8:84–207/EP1:285–371, 1891–1893).

exactly the same. Assuming that each science has its own set of objects, then the two sciences must, again, become the same science (R693a, 1904; cited in Kent 1987, p. 123).

3.2 Provision of Data and Suggestions

'Data' and 'suggestions' can move from a subordinate science to superordinate science (R693b.374–376, 1904, cited in Kent 1987, p. 124).[47] For example, according to Peirce:

> Metaphysics makes constant appeal to the special sciences for data, but it derives no principles from that source. Yet not one of the special sciences can proceed properly without the air of metaphysical principles. (R1336.12, 1892;[48] cited in Kent 1987, p. 184)

Sometimes, the 'data' provided by subordinate sciences is used as the basis for generalisations, inductions and abductive inferences. Peirce takes metaphysics to use the results of the special sciences in this way:

> Here and there, however, metaphysics avails itself of one of the grander generalisations of physics, or more often of psychics, not as a governing principle, but as a mere datum for a still more sweeping generalisation. (CP3.428, 1896)

One place that this is visible in Peirce's metaphysics is in his attempts to generalise the approach deployed in statistical mechanics to explaining irreversible processes (e.g. gas diffusion), to the explanation of the possibility of growth in general (e.g. the development of the laws of nature) (e.g. W8:100/EP1:287–288, 1891).[49]

In addition to suggestions of method, a subordinate science can 'suggest' new problems to a superordinate science. This is most obvious in cases where an anomaly in a subordinate science requires new developments in a superordinate science. In the case of astronomy (a descriptive science) and physics (a nomological science), changes in the orbit of Mercury detected by Urbain Le Verrier by 1859 were known to contradict Newtonian mechanics. It took General Relativity for these observations to be explained. In this case an anomalous result in a subordinate science

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[47]Kent notes that the hierarchy is not supposed to display every important relation that might hold between the various sciences (Kent 1987, pp. 54–55).

[48]This date was attributed to the MS by Kent.

[49]Peirce's metaphysical proposal, which we will have reason to look into in more detail later, proposes that the introduction of 'real chance' is necessary for a fully adequate metaphysics. The connection between Peirce's metaphysics and the science of thermodynamics is explored in detail in Reynolds 2002.

suggests that the superordinate science, physics, needs to be changed. It does not, by itself, reveal *how* the science must be changed. In the case of the precession of the perihelion of Mercury, it took 56 years.[50] Note that the issue here is not one that can be solved by an astronomer *qua* astronomer, it requires a much more general change at the level of physics.

Returning to the history of chemistry and geology, we can find an interesting example of a geological result which had the potential to have a major influence on chemistry. This can be found in the work of the French geologist Alexandre-Émile Béguyer de Chancourtois. De Chancourtois produced an early version of the periodic table that, for largely non-scientific reasons, was not widely influential. De Chancoutois' scheme was set out in a cylindrical diagram such that elements that behave similarly are found along vertical lines (much as elements with similar chemical structures appear along the vertical lines of the modern periodic table). This work was largely ignored because it was set out in the language of geology rather than chemistry. The point of note for our purposes is that De Chancoutois was initially motivated by the similarity of behaviour between pyroxenes and feldspars, two groups of minerals whose similar behaviour is explained by the underlying similarity in behaviour between aluminium and silicone (Scerri 2007, p. 72). In this case, then, a phenomenon discovered in a subordinate science suggested a generalisation that could only be properly developed in a superordinate science.

It is more difficult to find similar dynamics in the case of ethics and logic. The right kind of example would be a result discovered in logic and which would require a modification in our theoretical ethics.[51] For example, Peirce would be in such a situation if he were to become convinced that we can be culpable for beliefs and inferences over which we do not even have the conceivable ability to control. In this case he would need to re-evaluate the ethical principle that we are not to criticise habits of action that are not subject to self-control. Another possibility is that in studying the concept of truth the Peircean might come to believe that, as some contemporary deflationists and pragmatists argue, there is no need to postulate an ideal for thought beyond present conversational norms. This would

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[50]An account of these developments in physics and astronomy is given in Ni 2016.

[51]I'm here attempting to avoid the difficulties involved in spelling out exactly what Peirce wants to include within the realm of theoretical ethics (as opposed to practical ethics). The rough idea is that theoretical ethics does not directly affect our actual conduct (whereas practical ethics does) and that theoretical ethics concerns what we can say about purpose-directed action, abstracting away from the details of particular ethical decisions that affect some particular kind of agent (c.f. EP2:377, 1906).

affect whether Peirce's conception of the *summum bonum*, the ongoing growth of concrete reasonableness, is really the only possible ultimate aim for action.[52]

4   Two Pragmatist Worries

One of the central appeals of pragmatism for those interested in the philosophical implications of the sciences is its anti-reductionism and anti-foundationalism.[53] These aims may seem to be threatened by any attempt to order the sciences hierarchically. That is, we may worry that a superordinate science is 'foundational' for its subordinate sciences in a way which falls afoul of pragmatist scruples. We may also worry that a subordinate science ultimately 'reduces to' a superordinate one in a way which undermines the autonomy of the subordinate science. We will consider each issue in turn.

4.1   The Foundationalist Worry

Foundationalism is often taken to be the epistemological position which takes epistemic justification to require a suitable inferential link between the belief justified and some set of basic, or 'foundational', beliefs. When those foundational beliefs are taken to be certain, and the inferential links are deductive, then we have certain knowledge of the truth of the belief in question.[54] I'll call this view 'epistemic foundationalism' to distinguish it from the sense that I will eventually attribute to Peirce. Epistemic foundationalism is often challenged by pragmatists on fallibilist grounds. Loosely speaking, pragmatists take certainty to be an undesirable, infeasible, or unnecessary aim for philosophy.

The status of foundationalism in Peirce's account of the sciences can be brought out by considering two distinct metaphors that he offers for the project of theoretical inquiry in general and philosophy specifically. The latter is an architectural metaphor, which emphasises the importance of careful planning before going to work on the 'building' of theoretical inquiry. The former, the 'bog metaphor', em-

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[52]The connection between this conception of the *summum bonum* and the Peircean conception of truth will become more clear in the next two chapters.

[53]The chapter 'Privileged Representations' in *Philosophy and the Mirror of Nature* provides a good example (Rorty 1979).

[54]Modern statements of this view can be found in Fumerton et al. 2000. The most obvious historical example is the Cartesian strategy of finding a stable and certain 'archimedian point' from which to rebuild after having doubted everything (c.f. Descartes 1984, p. 16).

phasises the fallibility of any scientific result. Holding the two together allows for a kind of methodological foundationalism without the epistemological foundationalism which often accompanies it and which is a frequent target of pragmatist attack. That is, Peirce's classification offers a form of fallibilist foundationalism.

Peirce derives his architectural metaphor from his reading of Kant. According to Peirce, Kant holds that the construction of a philosophical system should be approached like the construction of a building.[55] This metaphor has, Peirce thinks, 'excellencies which the beginner in philosophy might easily overlook' (CP1.176, c. 1896). The first feature of the metaphor that Peirce endorses has nothing to do with foundationalism. He suggests that, unlike the visual arts, music, or poetry, public architecture must have a 'secular' character; it must express the spirit of the age as a whole. The achievement of this task would be undermined by 'thought characteristic of an individual—the piquant, the nice, the clever' which he takes to be 'too little to play any but the most subordinate rôle in architecture' (CP1.176, c. 1896).[56]

However, Peirce does take the metaphor to have aspects which can be described as foundationalist. We are to avoid systems which have been insufficiently planned out, for instance 'the new Schelling-Hegel mansion, lately run up in the German taste, but with such oversights in its construction that, although brand new, it is already pronounced uninhabitable' (EP1:247, 1887–1888). Philosophy requires detailed and sustained planning (W8:98–99/EP1:285–286, 1891). The architectural metaphor directs our attention to our own responsibility for the justification of our various beliefs. We are to plan out the system, and an important part of that planning is to ensure a strong foundation. As we will see in the next chapter, this is provided, in part, by cenoscopy.

The classification of the sciences has been taken by many to be the core statement of Peirce's 'system'. We have made reference already to Peirce's aspiration to 'a theory so comprehensive that, for a long time to come, the entire work of human reason [. . .] shall appear as the filling up of its details' (EP1:247, 1887–1888). This aspiration lines up with the architectural metaphor, and especially with the emphasis that Peirce puts on the importance of planning such a project. The hierarchy

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[55]Peirce refers in this passage to 'the architectonic of pure reason' (Kant 1998, A832/B860).

[56]Parker takes up something like this metaphor when he suggests that the hierarchy is related to the actual process of scientific inquiry in something like the way a blueprint plan of a house is related to the actual house. On this view, '[t]he classification of the sciences no more restricts the inquirer to moving through the classification one time in a straight line, than the blueprint of a house restricts the inhabitant to moving through it in two dimensional space.' (Parker 1998, p. 58).

draws our attention to foundations in this sense. It points out that, for example, if we are to be secure in our chemistry, then we ought to be secure in our physics. In order to attain stable and successful beliefs, we ought to attend to the ways in which the various disciplines and sub-disciplines of the sciences depend on each other. The hierarchy is foundationalist in so far as it draws our attention to this feature of inquiry. We can thus call Peirce a 'methodological foundationalist'.

That Peirce does not endorse epistemological foundationalism is made particularly clear by his metaphor of the bog. Having presented science as relying on a 'guessing instinct' and presented induction as a kind of passive openness to facts, Peirce goes on to say that as a result science:

> feels from that moment that its position is only provisional. It must find confirmations or else shift its footing. Even if it does find confirmations, they are only partial. It is still not standing on the bedrock of fact. It is walking on a bog, and can only say, this ground seems to hold for the present. Here I will stay till it begins to give way. (EP2:55, 1898)

The bog metaphor emphasises the fact that, in theoretical science, we can never be certain that any given belief will hold indefinitely. The most we are entitled to is the reflection that the current ground has held out for a long time, and even this is, strictly speaking an extra-theoretical reflection. That is, the judgement that some theoretical result should be applied in some practical case is itself a practical judgement and rightly incorporates many more considerations than those which are relevant in the theoretical sphere.[57]

The classification is not foundationalist in a sense which denies the insights of the bog metaphor. The provision of principles is not tied to any particular degree of certainty. For instance, the 'foundations' provided for chemistry from fundamental physics need not be more certain than the results of chemistry itself. Rather, Peirce is attempting to bring to light the dependency relationships that any given science has, whether it wants them or not. If, for example, we want to study the composition of the stars, then our conclusions will depend on the behaviour of the underlying chemicals and the laws of physics. If we know such laws, then we are justified in applying them in our astronomical research. Moreover, we will implicitly assume some such laws if we do not take them from other researchers. The risk of taking principles implicitly is that we will be unaware of a potential source of error in our work. If the 'foundations', either implicitly assumed

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[57]We saw this earlier when we looked at the relationship between the theoretical and the practical sciences (with the sciences of review mediating between them).

or explicitly taken from the foundational science, are false, then the subordinate science may be compromised. Consequently, we ought to make these relationships clear. Peirce attempts to do this by means of the classification.

We can summarise the relationship between the two metaphors by saying that the bog metaphor and the architectural metaphor direct our attention to two features of inquiry that are really present. On one side we have the fact that our beliefs are answerable to reality. As a result, there is always a chance that our best beliefs might fail, and that we end up being dragged under the bog. On the other side, we have the responsibility that we must take for the strength of our own beliefs and of the process of inquiry. While we are always in a precarious position, 'on the bog', this does not prevent us from exploring the ground underneath us or from carefully planning our next step.

4.2   The Reductionist Worry

There are many meanings attached to the term 'reductionism'. For our purposes we can take reductionism to mean the idea that the objects and phenomena of one science can be re-articulated without remainder in terms of the objects and phenomena of some other science.[58] An example of such a view would be the picture invoked by Laplace's Demon, an entity which knows the position of the fundamental constituents of nature at a given time and the physical laws governing them. Within a deterministic cosmos, Laplace's Demon has enough to know everything that has ever happened or will happen. In such a world one would only do, say, biology or even history, as a result of contingent limitations on ones own knowledge and cognitive capacities. That biology or history are engaged in at all would be the result of some lack on our part that prevents us from just doing the physics in which the objects of our investigation would be ideally understood.

The reduction charge against the classification is the thought that providing principles to a subordinate science suggests that the subordinate science is reducible to the superordinate science. It will turn out that a simple version of this charge can be easily dismissed, but that a more sophisticated reductionism is still open to Peirce and consistent with the classification.

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[58] As Brandom might put it, a reduction is when some target vocabulary is related to a base vocabulary in such a way that everything that can be said in the target vocabulary can be said without loss or remainder in the base vocabulary (c.f. Brandom 2008a, p. 2).

The simple version suggests that to order sciences according to principle dependence is to say that the subordinate science is reducible to the superordinate science. But this is not so. The hierarchy is consistent with each science supplying itself with its own principles on top of those it receives. It is also consistent with the possibility that the special observations made by a science are not able to be cashed out in terms of the observations of some superordinate science. For instance, philosophy can take for granted the results and patterns of reasoning of mathematics without thereby *becoming* a branch of mathematics.

For Peirce, mathematics is the science which frames and draws out the deductive consequences of various arbitrary hypotheses. Philosophy, on the other hand, requires appeal to actual experience. Philosophy is a 'positive science', while mathematics is a 'hypothetical' one. This is made out quite clearly in the following passage:

> The science of phenomenology[59] is in my view the most primal of all the positive sciences. That is, it is not based, as to its principles, upon any other *positive science*. By a *positive science* I mean an inquiry which seeks for *positive* knowledge, that is, for such knowledge as may conveniently be expressed in a *categorical proposition*. Logic and the other normative sciences, although they ask, not what *is* but what *ought to be*, nevertheless are positive sciences since it is by asserting positive, categorical truth, that they are able to show that what they call good really is so; and the right reason, right effort, and right being of which they treat derive that character from positive categorical fact.
>
> Perhaps you will ask me whether it is possible to conceive of a science which should not aim to declare that something is positively or categorically true. I reply that it is not only possible to conceive of such a science, but that such a science exists and flourishes, and phenomenology, which does not depend upon any other *positive science*, nevertheless must, if it is to be properly grounded, be made to depend upon the Conditional or Hypothetical Science of *Pure Mathematics*, whose only aim is to discover not how things actually are, but how they might be supposed to be, if not in our universe, then in some other. (EP2:144, 1903)

This is sufficient to show that phenomenology, while subordinate to mathematics, is not exhausted by the principles it derives from mathematics. It and all subordinate sciences in the hierarchy must appeal to what actually appears in experience. The hierarchy does not guarantee, or even suggest, that this difference can ever be overcome. Similarly, biology is not merely a branch of physics even though it can take the results of physics for granted in its reasoning. Likewise, a historian might take for granted the law of non-contradiction from logic and the law of gravity from physics while also developing their own principles for interpreting the testimony of historical texts.

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[59]Recall that phenomenology is the first division of philosophy in the hierarchy.

However, the hierarchy is *consistent* with a somewhat reductionistic proposal. We have already seen that Peirce thinks descriptive sciences tend to become classificatory and classificatory sciences tend to become nomological. Peirce expands on this in a speculative passage from the Cambridge Conferences lectures of 1898. First he continues the thought that sciences can 'move up' the hierarchy, then suggests that they may all converge on mathematics. On this view nomological sciences tend towards metaphysics, metaphysics towards logic, and logic 'seems destined to become more and more converted into mathematics' (EP2:39, 1898). Having said that, he characterises the aim of mathematics in the following terms:

> The host of men who achieve the bulk of each year's new discoveries are mostly confined to narrow ranges. For that reason you would expect the arbitrary hypotheses of the different mathematicians to shoot out in every direction into the boundless void of arbitrariness. But you do not find any such thing. On the contrary, what you find is that men working in fields as remote from one another as the African diamond fields are from the Klondike reproduce the same forms of novel hypothesis. Riemann had apparently never heard of his contemporary Listing. The latter was a naturalistic geometer, occupied with the shapes of leaves and birds' nests, while the former was working upon analytical functions. And yet that which seems the most arbitrary in the ideas created by the two men are one and the same form. This phenomenon is not an isolated one; it characterizes the mathematics of our times, as is, indeed, well known. All this crowd of creators of forms for which the real world affords no parallel, each man arbitrarily following his own sweet will, are, as we now begin to discern, gradually uncovering one great cosmos of forms, a world of potential being. The pure mathematician himself feels that this is so. He is not indeed in the habit of publishing any of his sentiments nor even his generalizations. The fashion in mathematics is to print nothing but demonstrations, and the reader is left to divine the workings of the man's mind from the sequence of those demonstrations. But if you enjoy the good fortune of talking with a number of mathematicians of a high order, you will find that the typical pure mathematician is a sort of Platonist. Only, he is [a] Platonist who corrects the Heraclitean error that the eternal is not continuous. The eternal is for him a world, a cosmos, in which the universe of actual existence is nothing but an arbitrary locus. The end that pure mathematics is pursuing is to discover that real potential world. (EP2:40, 1898)

On the view defended in this passage, all of the theoretical sciences might be contained within a sufficiently developed mathematics. This proposal, whatever it is, is not traditional reductionism. Before we consider this proposal, it is worth noting that the hierarchy doesn't *require* us to follow Peirce in this direction. However, we need not think that the proposal, even in its extreme form, is reductionistic in a sense which undermines the autonomy of particular sciences or demands a reduction of the objects of all sciences to some privileged set of mathematical objects.

Firstly, we need to be careful what we are imagining when we imagine 'completed mathematics'. One way of understanding what Peirce has in mind here is to

consider his examples of sciences 'moving up' the hierarchy. We have already introduced Peirce's claim that the work of Herschel represented a move in astronomy towards becoming a classificatory science. The mark of this was that astronomy began to have a grip on the question of possible kinds of stars and galaxies over and above knowledge of particular actual objects. Astronomy thus gained a certain amount of modal strength in this transition. One might say something similar about the move from a classificatory to a nomological science. Here the move is from an understanding of the behaviour of all possible kinds that are relevant for a given science to an understanding of some law-like principle underlying those kinds. If this move can be taken, we gain an understanding not only of the various possible individuals that could fall under a given kind, but also of the ways in which the possible kinds are determined by some law. Perhaps this also gives us further knowledge of what kinds there would be were the laws in play slightly different.

The important point to note is that 'moving up the hierarchy' does not entail losing the uniqueness of your objects and phenomena or your autonomy in studying them. Rather, one gains a more modally strong handle on what is going on in your domain and why. Peirce's proposal, when describing the movement of astronomy up the hierarchy is not that astronomy thereby becomes a mere part of fundamental physics, rather astronomy itself changes in character from a merely descriptive science into a classificatory one. There is thus no reason to think that Peirce's imagined future mathematics would undermine this feature of movement up the hierarchy. In fact, it might be best to think of Peirce's proposal as holding that the various sciences in the hierarchy might all become entirely 'mathematical', rather than that they all might become part of mathematics.

We have also noted the ontological aspect of reductionist proposals. Laplace's Demon can only do its magic if the objects of the various sciences can all be understood as entirely made up of the objects studied in fundamental physics. Peirce's imagined future mathematics does not have this feature since, on his understanding, mathematics does not have an ontology of its own. For instance, mathematics is not to be understood as the study of sets, or any other fundamental object out of which all others are to be made up. The 'positive sciences' (cenoscopy and idioscopy) *do* have to take some set of actual objects as their domain. To make some positive science entirely mathematical, one would have to re-articulate the objects and phenomena of that science in such a way that they appear as deductive

consequences of some hypothetical state of things. Peirce also imagines that the relations between this state of things and others would be also known (and that the actual world would thereby become an 'arbitrary locus' in the world of possibility). In so far as this procedure captures the unique features of the objects of whatever discipline we are studying, we need not think of this as a 'reduction' in any negative sense. We have not, for instance, reduced the world to sets and their axiom-governed combinations.

Conclusion

This chapter has provided a detailed account of Peirce's classification and hierarchy of the sciences as it stood after 1902. We have considered the motivations for the classification and its historical antecedents and philosophical motivations. Having seen the systematic motivations from within Peirce's own thought and the connection of the classification to to the central issues of this thesis, we turned to the interpretation of the classification itself.

We considered Peirce's characterisation of science in terms of the 'spirit' of its practitioners. This was distinguished from approaches that highlight either the methods or results of the sciences. We then turned to two important distinctions that Peirce makes, the first between theoretical, practical, and retrospective sciences, and the second, a division of the theoretical sciences into schematoscopic, cenoscopic, and idioscopic sciences.

We then turned to the relations between sciences depicted by the classification. On one hand, subordinate sciences receive principles from superordinate sciences. On the other, subordinate sciences can provide data and suggestions to superordinate ones. These relationships were illustrated with examples from both philosophy and the special sciences.

Finally, we considered two characteristically pragmatist worries about the hierarchy. The first, that it is a 'foundationalist' proposal, was avoided by distinguishing between epistemological foundationalism, which Peirce rejects on fallibilist grounds, and methodological foundationalism which Peirce endorses. The second, that the hierarchy represents a form of reductionism, was approached from two directions. The first was to simply note that no reduction of one science to the other is required by the hierarchy. The second was to consider Peirce's proposal that all sciences are 'moving up' the hierarchy towards mathematics. I suggested

that Peirce's conception of the nature of mathematics prevents this proposal from collapsing into a form of reductionism that damages the autonomy of the reduced science.

We now have a clear idea of what Peirce's position is with respect to the relationship between philosophy, understood as cenoscopy, and the other sciences. In the next chapter we turn to the arguments that Peirce deploys for this arrangement and critically compare them to some more contemporary proposals. We have also set up the background against which the function of metaphysics, as the 'bridge' between cenoscopy and the other sciences, can be understood. This will be taken up in detail in Chapter Four.

Chapter 2

Cenoscopy, Idioscopy, and First Philosophy

Introduction

Pragmatism is often taken to be a form of naturalism.[1] Naturalism is understood in many ways. One important aspect of any form of naturalism is the relationship it posits between science and philosophy. At a bare minimum, a naturalist thinks philosophy should be responsive to the natural (and perhaps social) sciences. We have already seen that Peirce thinks of philosophy as a kind of theoretical science, engaged in a project that is continuous with what he calls, following Bentham, 'idioscopy'. However, we have also seen that Peirce maintains that philosophy is a distinct kind of science, cenoscopy, and that this kind of science has a foundational role for the other sciences (excluding mathematics). In this he differs from many contemporary forms of pragmatist naturalism. These contemporary forms foreground the rejection of 'first philosophy' as a core naturalist commitment. On such views Peirce does not come out as a naturalist at all.[2] In this chapter, I defend Peirce's conception of the relationship between science and philosophy against two recent defenders of the pragmatist rejection of first philosophy: Huw Price and David Macarthur.

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[1]For instance, consider recent debates over the relative strengths of the American pragmatist and German idealist traditions. In these debates pragmatism is often taken to be a naturalisation of German idealism (e.g. Margolis 2012, p. 122; Gardner 2007). Dewey explicitly understands himself to be doing something like this (e.g. in 'From Absolutism to Experimentalism', LW5:147–161).

[2]Of course, there are other senses in which Peirce can be understood to be a naturalist, but they are not the central issue in this chapter.

While the previous chapter set out Peirce's account of the relationship between philosophy and the other sciences, it did not provide any arguments for his position. In addition, since it had to cover the entire hierarchy of the sciences, it did not spend sufficient time setting out what Peirce means by the terms 'cenoscopy' and 'idioscopy'. Both gaps will need to be filled before we can proceed to the critical comparison of Peirce's views with those of Price and Macarthur.

We have already seen that cenoscopy is the observational science of the 'commonly available'. However, we have not yet got a good idea of what Peirce means by this notion. In fact, one of Peirce's main characterisations, in terms of what is available to the 'adult and sane', is likely to mislead. I consider two objections to this proposal and abandon it. I then turn to Peirce's suggestion that the conclusions of cenoscopy should be able to be reached by any possible 'scientific intelligence'. On this view, the 'common' of cenoscopy is common to anything that can learn from experience. Cenoscopy, then, is the activity by which we attempt to abstract away from contingent features of our present situation to arrive at (fallible) conclusions about what should be admitted by any possible scientific intelligence. I conclude this section by discussing the relation between this conception of cenoscopy and the traditional *a priori*.

We have also seen that the relationship between cenoscopy and idioscopy is one of principle dependence. Cenoscopy provides, but does not receive, 'principles' from idioscopy. That is, the results of cenoscopy, if true, apply in all idioscopic investigations. The converse does not hold. We also saw that this relationship does not preclude philosophy from taking 'data' or 'suggestions' from the other sciences. In fact, on Peirce's view it had better do this if it is to develop in the most efficient manner.

The arguments for this position considered in this chapter will be divided into 'negative' and 'positive'. The positive case turns on the role of abduction in Peirce's account of scientific inquiry. On Peirce's view, the inquirer always needs to provide some kind of hypothesis and science cannot be achieved by mere induction. This points in the direction of an account of the inquirer that might underlie all particular idioscopic investigations. I argue that only cenoscopy, with its appeal to all possible scientific intelligences, can do the job while maintaining the conception of science as truth-directed. On the negative side, Peirce challenges various proposals that would base philosophy in some idioscopic science or other. In this connection I consider Peirce's rejection of Sigwart's psychologism and Dewey's 'natural

history of thought'. In both cases, Peirce diagnoses a potential failure of rational self-control. I conclude this section by considering whether Peirce's rejection of such views, which I will group under the heading 'idioscopism', constitutes a 'block on inquiry' and thus a violation of his 'first rule of logic'.[3]

With Peircean arguments in hand, we can turn to the position of some more contemporary pragmatists with respect to the relationship between philosophy and the special sciences. One prominent contemporary pragmatist, Huw Price, rejects metaphysics as a discipline on the basis of his own brand of naturalism. Price agrees with other pragmatists that our philosophical work ought to be constrained by some account of ourselves and our practices. Unlike Peirce, and many other pragmatists, Price thinks that this account should be taken from, variously, biology or anthropology. After introducing Price's view, I connect it with Peirce's arguments against idioscopism. I argue that, from the Peircean perspective, Price's view is a threat to the possibility of rational self-control and that Price does not say enough to require us to abandon Peircean hopes for its achievement.

Macarthur's form of 'liberal naturalism' provides an alternative to both Price and Peirce. Macarthur holds, with the Peircean, that Price's account of philosophy is unacceptably scientistic. Macarthur thinks, for instance, that Price's scientism elides the first and second person perspectives of the participant in a given linguistic/conceptual practice. In so far as the Peircean approach starts from the perspective of the inquirer, rather than from a third-person perspective on the inquirer, it aligns with Macarthur's. However, the two approaches diverge on the question of 'first philosophy'. From Macarthur's position, there are reasons to be sceptical of the feasibility or desirability of abstracting away from contingent features of our own situation towards the perspective of any possible scientific intelligence. I argue that, like Price, Macarthur does not say enough to undermine the hope for rational self-control that underlies Peirce's conception of cenoscopy as first philosophy.

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[3]Strictly speaking, the first rule of logic is that 'in order to learn you must desire to learn and in so desiring not be satisfied which what you already incline to think', with 'do not block the way of inquiry' presented as a corollary (EP2:48, 1898). But to violate a corollary of a rule is also to violate the rule.

1　Characterising Cenoscopy

Peirce summarises the distinction between cenoscopy and idioscopy in the following passage from his 1903 Harvard Pragmatism lectures:

> Philosophy, as I shall use this word, and use it without any serious rupture with general usage, is distinguished from all the special theoretical sciences, whether they belong to the great Physical wing or to the great Psychical wing of special science, that is, whether they be inquiries into dynamics, physics, chemistry, physiology, anatomy, astronomy, geology, etc., or whether they be inquiries into psychology, anthropology, linguistics, history, etc.—Philosophy, I say, is distinguished from all of these by the circumstance that it does not undertake to make any special observations or to obtain any perceptions of a novel description. Microscopes and telescopes, voyages and exhumations, clairvoyants and witnesses of exceptional experience are substantially superfluous for the purposes of philosophy. It contents itself with a more attentive scrutiny and comparison of the facts of everyday life, such as present themselves to every adult and sane person, and for the most part in every day and hour of his waking life. The reason why a natural classification so draws a line between Philosophy, as *cenóscopy (κοινοσκοπία)* and Special Sciences, as *idioscopy (ἰδιοσκοπία)* ,—to follow Jeremy Bentham's terminology,—is that a very widely different bent of genius is required for the analytical work of philosophy and for the observational work of the special science. (EP2:146, 1903)

Cenoscopy, unlike idioscopy, does not require appeal to 'microscopes and telescopes, voyages and exhumations' and so on. Rather, the observational science of the common is characterised in terms of what is almost always available to any 'adult and sane person'. It takes this material and, as a result of 'more attentive scrutiny and comparison', produces philosophy. This gives us a test that can exclude a discipline from cenoscopy: if there's someone amongst the collection of adult and sane people who doesn't have access to the observations in question, then the inquiry is not cenoscopic. We can easily point to, say, Hypatia as someone who did not have access to the observations enabled by the use of microscopes. This shows that microbiology is not a cenoscopic science. On the other hand, we might struggle to imagine anyone adult and sane as being unable to 'see' the validity of *modus ponens*. Arguments of this sort could be used to establish the cenoscopic nature of logic.

Since the idea has been brought up in the passage just cited, now is as good a place as any to point out that we need not think of cenoscopy as the only meaning we can give the term 'philosophy'. In this text, Peirce suggests that thinking of philosophy as cenoscopy does not involve 'any serious rupture with general usage'. As it stands this does not exclude other meanings. However, we saw in the last

chapter that Peirce also considers there to be a brand of philosophy, *philosophia ultima*, associated with the sciences of review. He goes on to say:

> Widely different as the two sciences are, [they are] frequently confounded and inter-tangled; 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. In the writer's opinion each is an important study. (EP2:373, 1906)

There is no reason to think that other sensible meanings for 'philosophy' are not possible.[4]

1.1 The Adult and Sane

In the passage we have just considered from 1903, Peirce aligns the common with that which is available to the 'adult and sane'. At best, this proposal is liable to be misinterpreted. In this section I briefly point towards a broad cluster of ethical/political issues with the notion, before turning to an objection centred around the possibility of 'armchair idioscopy'. The aim of this latter objection is to highlight the tendency of a notion like the 'adult and sane' to attach to a specific group of actual, spatio-temporally located, entities. As such, there will be observations available to all members of this group which are, strictly speaking, idioscopic. In both cases, the objection is that Peirce's formulation is misleading with respect to his actual view.

Peirce frequently appeals to a notion of sanity in his arguments. For instance, we find Peirce appealing to what 'any sane man' would believe in attempts to defend the reality of generals (e.g. EP2:183, 1903; 343, 1905). We see Peirce deploying the logical maxim that if any 'sane' person disagrees with a position it should be doubted (e.g. W2:195/EP1:13, 1868; W5:221/EP1:229, 1885). We also see judgements about features of the experience of 'any sane person'. For instance, that their experience is divided into an 'inner' and 'outer' world (CP5.487, c. 1907), and that they have no experience from which can be inferred anything concrete about the life after death (CP6.451, 1895). Often these arguments can be rephrased in terms of the account of the commonly-available that will be developed in a moment.

One set of problems with appealing to notions of sanity and adulthood is that they are incredibly culturally variable, not to mention politically charged. As a

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[4]We should expect even within Peirce's own scheme that there is room for a 'practical philosophy' alongside theoretical philosophy and the *philosophia ultima* that appears within the sciences of review.

result such notions have exclusionary potential that should at least give us pause. The conception of philosophy on the table is one according to which it is an observational science. A result of this is that one can only participate in philosophy if one has access to the observations on which it depends. Consequently, excluding someone from the adult and sane is excluding them from the ability to engage in philosophy. Given the foundational role of philosophy in Peirce's conception, such people would also be excluded from fully engaging in the practice of theoretical inquiry.

We need not restrict ourselves to hypothetical examples here. History is well populated with examples of various groups of people being excluded from inquiry (and other social practices) on grounds of something like 'insanity'. Women have often been excluded from education on the basis of a perceived lack of rationality or of excessive sentimentality. Similar issues are in play in terms of both race and class. As is well known, homosexuality was listed in the *Diagnostic and Statistical Manual* of the American Psychiatric Association until 1973 (Drescher 2015). A characterisation of cenoscopy which thereby excluded homosexuals would be, of course, unacceptable. It is not hard to see why notions of 'sanity' might slide towards various forms of racism, sexism, homophobia, etc.[5]

Moreover, a notion of sanity can unduly restrict the kind of hypotheses entertained within a discipline. It is not for nothing that the heliocentric hypothesis was initially thought to be insane. Attitudes about the obvious consequences of such a hypothesis for the observations we make on earth meant that it was taken to imply that we should see the effects of the rapid movement of the earth in our everyday experience. Why, for instance, don't I have to hold on tight to the earth to prevent being flung off it.[6] In such circumstances, those with heliocentric inclinations can easily be classified as 'insane'.[7] It is not impossible that the same kind of rejection could prevent us from properly attending to true hypotheses today.

The discussion above has focused on sanity, which has more obviously pernicious potential than does the notion of adulthood. However, it is not hard to ima-

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[5]In this connection it's also worth noting that Peirce typically refers to 'any sane man' and similar, rather than to the 'adult and sane person'.

[6]Consider for example, Jean Bodin's claim, in 1597, that '[n]o one in his senses, or inbued with the slightest knowledge of physics, will ever think that the earth, heavy and unwieldy from its own weight and mass, staggers up and down around its own center and that of the sun; for at the slightest jar of the earth, we would see cities and fortresses, towns and mountains thrown down' (Kuhn 1957, p. 190).

[7]According to Kuhn, heliocentrism was able to overcome this conservatism by virtue of making itself mathematically indispensable (Kuhn 1957, p. 185).

gine such a notion being deployed to backup a kind of conservatism within the sciences.

A further issue with the notions of both adulthood and sanity is that they can suggest the proper functioning of some particular species in some particular place. It is perhaps possible to specify a notion of adulthood and sanity that applies to, say, the human species in general. If so, we could attempt to clarify what is commonly available by picking out some particular group at a time that constitute the adult and sane or the group that constitutes the adult and sane at all times. However, there are problems with any proposal that ties the commonly available to any group of actual entities. One of these is brought out by considering 'armchair idioscopy'.

Let's suppose that we have agreed on a criterion for picking out the adult and sane and that the world is set up such that the whole collection picked out is located on Earth and has some mode of experiential access to the regular cycles of the Moon and Sun. They know, for instance, that the Sun rises and sets once a day, and that the Moon runs through a cycle from being entirely dark through to fully illuminated, and back again. On this basis, we can get the following piece of reasoning, which roughly follows the ancient astronomer Aristarchus, off the ground:

1. When the Moon is half-illuminated, the Sun, Earth, and Moon form a right triangle where the right angle is between the Sun and the Earth.

2. When the Moon is half-illuminated, the angle between the Sun and Moon is very close to, but just less than 90 degrees.

3. Therefore, the distance from Earth to the Moon must be significantly less than the distance between Earth and the Sun.[8]

Here, a diagram may help (Figure 2).

The conclusion of this piece of reasoning is an astronomical claim which is derivable from the armchair by any of the entities in our group of the adult and sane.

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[8]We can go further without needing to engage in any particularly special observations. We can follow Aristarchus's rough estimate of the angular distance between the Moon and the Sun, which was around 87 degrees. Applying some basic trigonometry, we can derive that the Sun must be around 19 times further from the Earth than the Moon is. As it happens, this value is much too small. More accurate measurements of the angular distance between the sun and the moon are able to give us a much better value. However, at that point we would be within the realm of idioscopy.

Figure 2: Earth, Moon, and Sun
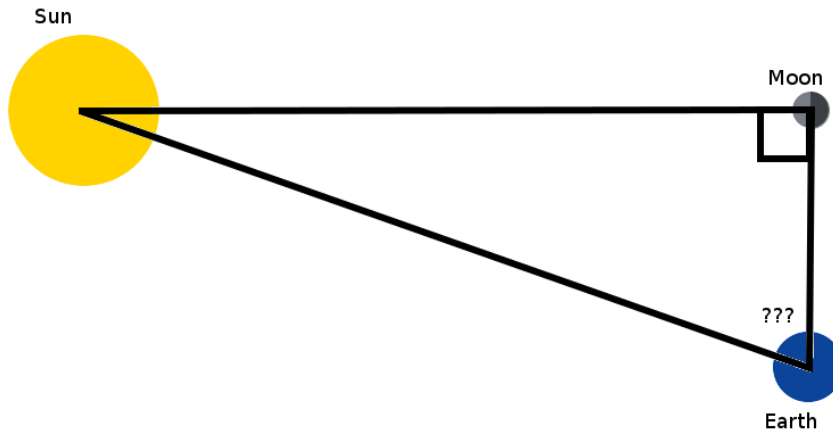
It is, in other words, an idioscopic conclusion that risks coming out as cenoscopic according to the present proposal.

This may not seem like much of a worry, given that we've imagined a very specific set of circumstances and a very specific group. We could imagine a slightly different set of the 'adult and sane' for whom this reasoning would not be available. Add, for instance, a population of people living underground to the previous scenario and the reasoning becomes idioscopic. More speculatively, we could imagine some alien species entirely outside of the light-cone of our solar system, who are thus unable to come to any conclusions regarding the relative distances between the Sun, Moon, and Earth.

The underlying point is that it seems plausible that any collection of the sort that we have been considering will be able to derive some conclusions that are, properly understood, idioscopic, on the basis of experience common to all in the collection. For instance, any collection of actual entities, regardless of their adulthood or sanity, will be spatio-temporally located in such a way that conclusions can be derived about that neighbourhood that are not available to other possible-but-not-actual observers. What we want then is a notion that includes all possible inquirers, rather than some particular group of inquirers.

In fact, we can think of 'adulthood', 'sanity', and even of the particular spatio-temporal location occupied by any collection of people as a set of special apparatuses in the same way that we think of those listed by Peirce in his 1903 characterisation of idioscopy. The claim then, is that the idea of collecting the adult

and sane, or any other collection of actual people, will result in a group which, strictly speaking, all possess some kind of special observational apparatus. Two desiderata thus emerge from our consideration of the 'adult and sane': we want a characterisation of the commonly available that avoids:

1. the exclusionary potential of picking out properties like adulthood and sanity, and

2. we want a proposal that does not pick out some particular set of entities whose contingent features enable them to derive properly idioscopic conclusions from experience common to each.

1.2   The Scientific Intelligence

Thankfully, Peirce offers an alternative account of the commonly available that answers to the two needs just set out. Some time around 1897 Peirce offered the following as a characterisation of logic:

> Logic in its general sense, is, as I believe I have shown, only another name for *semiotic* (σημειωτική) the quasi-necessary, or formal, doctrine of signs. By describing the doctrine as 'quasi-necessary,' or formal, I mean that we observe the characters of such signs as we know, and from such an observation, by a process which I will not object to naming Abstraction, we are led to statements, eminently fallible, and therefore in one sense by no means necessary, as to what *must* be the characters of all signs used by a 'scientific' intelligence, that is to say, by an intelligence capable of learning by experience. [...By abstraction] we can reach conclusions as to what would be true of signs in all cases, so long as the intelligence using them was scientific. The modes of thought of a God, who should possess an intuitive omniscience superseding reason, are put out of the question. Now the whole process of development among the community of students of those formulations by abstractive observation and reasoning of the truths which *must* hold good of all signs used by a scientific intelligence is an observational science, like any other positive science, notwithstanding its strong contrast to all the special sciences which arises from its aiming to find out what *must* be and not merely what *is* in the actual world. (CP2.227, c. 1897)

As this passage presents it, logic proceeds from our familiarity with the use of signs, and attempts, by a process which will be discussed in a moment, to reach conclusions that would apply to all possible 'scientific intelligences'. This latter notion is cashed out by Peirce in terms of anything that can learn from experience. Excluded from such a conception are ordinary physical objects, sticks and stones for instance. Also explicitly excluded, is the notion of God as intuitive intelligence. This notion, which Peirce derives from Leibniz, is of a being whose act of thinking

automatically creates the thing thought.[9] That is, if such a God were to think 'There are birds wandering about on the roof' it would immediately be the case that there are birds wandering about on the roof. Such a being could never learn from experience, since learning is a process by which we come to align our thought with what actually is the case. The need to align ones thought with reality would never arise.

We can take this characterisation of logic and apply it to cenoscopy in general by simply removing the reference to 'signs'.[10] On this view, we are to think of cenoscopy as abstracting away from the contingent features of our experience to gain a (fallible) conception of what must be present to anything that can learn from experience. Vitally, this conception concerns what must be available to any *possible* scientific intelligences, rather than any collection of *actual* entities of whatever sort.

Peirce provides short account of the abstractive process to be used in reasoning about what must be present to any scientific intelligence:[11]

> As to that process of abstraction, it is itself a sort of observation. The faculty which I call abstractive observation is one which ordinary people perfectly recognize, but for which the theories of philosophers sometimes hardly leave room. It is a familiar experience to every human being to wish for something quite beyond his present means, and to follow that wish by the question, 'Should I wish for that thing just the same, if I had ample means to gratify it?' To answer that question, he searches his heart, and in doing so makes what I term an abstractive observation. He makes in his imagination a sort of skeleton diagram, or outline sketch, of himself, considers what modifications the hypothetical state of things would require to be made in that picture, and then examines it, that is, observes what he has imagined, to see whether the same ardent desire is there to be discerned. By such a process, which is at bottom very much like mathematical reasoning, we can reach conclusions as to what would be true of signs in all cases, so long as the intelligence using them was scientific. (CP2.227, c. 1897)

Again, Peirce is discussing logic here, but we can draw out some broader consequences. The abstractive process that Peirce describes deploys both actual experience and imagination. In his example, we experience some presently-unachievable

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[9]Leibniz holds that '[o]nly God has the privilege of having nothing but intuitive knowledge' (Leibniz 1996, p. 490). In an interesting discussion of Leibniz's account of God, we find Peirce challenging the idea of a God that does not have the power of improvement (CP7.380, 1902). Other relevant passages include: CP1.35, 1885; 4.67, 1893; 6.508, c. 1906.

[10]Another angle from which we could approach the characterisation of 'cenoscopy' would be to focus our attention on Peirce's variety of phenomenology. Phenomenology is, for Peirce, the first division of philosophy and gives principles to all the other branches of philosophy. Peirce holds that there must be sufficient commonality in the form of experience between any inquirers to enable phenomenology to proceed. It seems that Peirce thinks of this as a kind of regulative assumption of philosophy (e.g. EP2:362, 1905).

[11]This passage was hidden by an ellipsis in the previous block quote.

desire, we imagine conditions such that it could be satisfied and ask how we would feel on those occasions. In so doing, we rise above at least some of the contingent features of our situation. By something like this process we get closer to a conception of 'what must be and not merely what is'.[12]

A more substantive example that gives a sense of Peirce's method can be found in the Harvard Pragmatism Lectures. In the course of the second lecture of the series, Peirce attempts to show that we must take experience to include more than just a play of feelings. It must also include direct experience of external resistance.[13] In order to make this argument, which aims at a 'quasi-necessary' conclusion about what experience must include for any scientific intelligence, Peirce begins with the familiar experience of being surprised. Any reader following will be able to come up with an example from their own history where they have been surprised. He asks us, also, to imagine a few scenarios. For instance, sailing along in a boat and suddenly, without warning, striking a rock (EP2:154, 1903). These examples develop our ability to discriminate between the mere play of feeling and the experience of resistance. We are also to note that such experiences are necessary in any process of learning we can conceive of. The basic thought is that without the world 'pushing back' in the way these example bring to the fore, then there would be no constraint on our beliefs and, consequently, no learning. In so far as we fail to be able to imagine learning from experience without resistance, we conclude, by means of a fallible abstraction, that surprise (and thus resistance) is a necessary feature of the experience of any possible scientific intelligence.[14]

Cenoscopy, then, is the theoretical science which is based on those observations which we take to be available to any scientific intelligence. Cenoscopy is distinguished from the special sciences (or 'idioscopy'), the forms of theoretical science which require 'special observations'. Special observations are such that they need

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[12]Peirce's account of mathematical reasoning as experimentation on 'skeleton diagrams' has been much discussed in recent years (e.g. Champagne 2016; Legg 2012; Shin 2002; Stjernfelt 2000). I will not attempt to add to that discussion here. The example Peirce gives of hypothetical practical reasoning, and the example from the pragmatism lectures that will be deployed soon, should be enough for our purposes. It is important to note, though, that this is part of the story about how philosophy can target modally strong conclusions about what must be the case for any possible scientific intelligence.

[13]In the language of Peirce's categories, he is attempting to show that experience must include 'secondness' as well as 'thirdness'.

[14]Another aspect of this argument is to note the necessary connection between having beliefs and having expectations. In order to learn, it is probably necessary to already have at least some beliefs. That expectations can be violated suggests some 'non-ego' against which the 'ego' interacts (EP2:154, 1903). A further variant of this argument will be considered in Chapter Four.

not be available to any possible inquirer. As Peirce characterises it, idioscopy is the kind of science 'depending upon special observation, which travel or other exploration, or some assistance to the senses, either instrumental or given by training, together with unusual diligence, has put within the power of its students' (CP1.527, 1902). Or, to recall the previous passage, '[m]icroscopes and telescopes, voyages and exhumations, clairvoyants and witnesses of exceptional experience' (EP2:146, 1903). The special sciences we have considered so far all involved special instruments. The advances in geology and chemistry we considered in the previous chapter required the ability to ascertain the weights of various elements. Since individual atoms are too small to be directly weighed, all sorts of techniques had to be developed. Even simple geology requires special observations in so far as it depends on observations of this rock or that rock rather than any others. For instance, we can imagine that there is currently an intelligent species on another planet, who by virtue of its particular geology have no access to gabbro rocks.

Returning, now, to the two charges against characterising cenoscopy in terms of what is available to the adult and sane, we see that they do not apply to the notion of the scientific intelligence. First, it is not perniciously exclusionary to exclude things which can not possibly learn from experience from the practice of learning from experience.[15] Second, the 'armchair idioscopy' objection relied on there being some perspective we could imagine from which the inferences in question could not be made. This cannot be the case with anything derivable from the perspective of *any possible* scientific intelligence. We have thus moved from a conception of cenoscopy which tends towards picking out some particular group of actual entities to one that applies to all possible entities.[16]

It is also worth noting, in connection with the worries about exclusion that arise from the 'adult and sane' proposal, that the notion of universality that attaches to the possible scientific intelligence is not the kind which can be claimed to possessed by any particular group of humans, 'sane' or not. In so far as critical studies reveal the influence of various forms of prejudice on the results of philosophical inquiry, they also reveal that the philosophy in question is failing to be properly cenoscopic. Such results should be welcomed by anyone engaged in cenoscopic in-

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[15]Recall that the problem set out above was that exclusion from those who can engage in cenoscopy would be also an exclusion from the practice of inquiry writ large. The characterisation of the common in terms of the possible scientific intelligence only excludes things that couldn't possibly engage in inquiry.

[16]Those already familiar with Peirce will see that I am, in effect, charging the 'adult and sane' proposal with tending towards a kind of nominalism (c.f. Forster 2011, p. 17).

quiry. Moreover, much like Peirce's fallibilism, this notion of the universal puts in question any claim to its possession by any particular person or group.

Finally, it is important to note that the idea of the scientific intelligence is probably in the background whenever Peirce uses the language of 'adulthood' and 'sanity'. This is made clear in the Regenerated Logic of 1896, where Peirce says that '[philosophy] confines itself [...] to the universal phenomena of experience; and these are, generally speaking, sufficiently revealed in the ordinary observations of every-day life'. This is the kind of thought that motivates the appeal to what is available to the adult and sane (here with 'ordinary' substituted). However, Peirce continues, adding that 'in the strictest sense' he means those 'observations as must be open to every intelligence which can learn from experience' (CP3.428, 1896). While such features are available from the everyday perspective, they need not be immediately familiar to us and they may well surprise us.

1.3   Cenoscopy and the *A Priori*

The distinction between cenoscopy and idioscopy allows Peirce to capture the motivations for thinking that philosophy is an *a priori* discipline. The distinction between the *a priori* and the *a posteriori* concerns the relationship between a claim, or a form of reasoning, and experience. If the claim or inference does not require an experiential basis then it is *a priori*, if not it is *a posteriori*. Cenoscopy is *a priori* in some senses.

The *a priori* is sometimes aligned with what can be discovered 'from the armchair'.[17] That is, what can be discovered without going out and looking for some special experience. On this conception the *a priori* can appeal to common experience, however 'common' is cashed out. This is conception obviously aligns with Peirce's notion of cenoscopy. It also aligns with the idea that cenoscopy is not to be turned into idioscopy. For instance, Fumerton, defending the armchair, claims that 'one doesn't need to engage in highly specialised investigations into the structure of the brain, the causal origin of language, the fundamental laws governing the physical universe, or complex sociological/psychological facts about people in order to get an answer to the questions that preoccupy [the armchair philosopher]' (Fumerton 1999, p. 23).

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[17]For instance, Fumerton uses the term 'armchair philosophy' to capture what he takes to have been typically meant by saying that philosophy is *a priori*. However, he acknowledges that this can be misleading if one has a stricter notion of the *a priori* in mind (Fumerton 1999, p. 22).

However, the notion of the *a priori* can also be read as requiring a more radical independence from experience than this. One way of cashing this out is in terms of necessity and contingency. The *a priori* can be aligned with the necessary if we take experience to be only capable of providing information about mere local matters of fact. Such experience could not tell us that something must be true in all worlds or for all possible inquirers.[18] We have already seen that Peirce's conception of logic as 'quasi-necessary' stems from the conception of cenoscopy as abstracting away from contingent features of human experience in order to gain a conception of what is necessary for any possible inquirer. Cenoscopy is thus *a priori* if this means that it aims at modally strong conclusions. However, in so far as its methodology for deriving necessity claims depends on observation there may still be a problem.

If the *a priori* is taken to exclude anything that is observational *in any sense* then Peirce does not think that *any* discipline is *a priori*. We saw in the last chapter that Peirce holds that all theoretical sciences are observational. In this connection, Peirce famously rejects what he calls the '*a priori* method' in 'Fixation of Belief'. The '*a priori* method' is characterised, rhetorically, as the method whereby one accepts a conclusion because it strikes one as rational (W3:252/EP1:119, 1877). In a later text, Peirce suggests that metaphysicians who adopt this method, at the expense of mastering exact logic, 'had better put up [their] shutters and go out of the trade' (EP2:31, 1898). Our sense of what is rational is not to be considered a source of knowledge when used by itself.[19] Peirce does, however, think we do have something like a rational insight or 'natural light of reason' (CP2.25, 1902). However, this faculty is only able to aid in the hypothesis generation process—it cannot be the basis of an autonomous science. We will consider this in more detail in a moment.

Peirce himself uses the term '*a priori*' in various ways. In one place we find him holding that logic is not 'purely *a priori*', but has a 'degree of apriority' (CP292,

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[18]Fumerton denies that the traditional conception of philosophy as an armchair discipline makes it *a priori*, if one understands the *a priori* to be, strictly speaking, the necessary.

[19]Some recent work on philosophical methodology aligns the traditional *a priori* with something like 'rational intuition'. Nolan, for instance, argues against the equation of the armchair and the *a priori* on the basis that armchair work does not require any special form of rational intuition. He defends, instead, the '*a posteriori* armchair (Nolan 2015). Williamson, while acknowledging, 'loosely speaking', an alignment between the *a priori* and the armchair, rejects the view that armchair methodology is radically different from the methodology of the natural sciences on the basis of a lack of a special faculty of *a priori* intuition (Williamson 2005, p. 1, p. 15).

1908).[20] On the other hand, Peirce holds that 'when we come to study logic, we shall find that all such *a priori* arguments, whether *pro* or *con*, about positive fact are rubbish' (CP2.137, 1902). Here, Peirce is concerned with *a priori* arguments concerning whether there is any truth or not. Peirce takes the 'positive fact' that there is some truth or other to be forced on us by experience.[21]

Cenoscopy is then *a priori* if by that we mean independent of any observations not available to any possible inquirer. Of course, Cenoscopy may, of course, 'take suggestions' on the from idioscopic sciences in the sense presented in the previous chapter. It is also *a priori* if by that we mean something that aims at necessity claims, or that aims to explore non-actual possibilities. It is not *a priori* is by that we mean entirely independent of observation *in toto*.

2   Cenoscopy as First Philosophy

Having filled the gaps in our understanding of cenoscopy and idioscopy, we can now turn to the foundational status of the former for the latter. The claim to be defended is that this turns cenoscopy into a kind of 'first philosophy'. This claim is quite vague, and consequently not particularly hard to establish. Rather, real progress in our understanding of Peirce will be achieved by seeing the particular mode of first philosophy that he defends. In later chapters, we will turn our attention to the specific role of metaphysics within this framework.

A good working conception of 'first philosophy' can be derived from De Caro and Macarthur. They present 'First Philosophy' as having two characteristics: *authority* over, and *foundational status* for, the other sciences. In the following passage they refer specifically to 'scientific naturalism', but their 'liberal naturalism' shares this rejection of first philosophy:[22]

> Scientific naturalism is, as Quine elegantly puts it, the 'abandonment of the goal of a First Philosophy prior to natural science.' Abandoning First Philosophy involves two related ideas: 1) the denial of philosophy's traditional authority—philosophy can no longer claim to be the master discipline that sits in judgment of the claims of the

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[20]Logic has this degree of apriority in so far as at least some of its conclusions must be true on the basis of 'necessary deduction[s] from the fact that there are signs'. This is, of course, something like the account of logic as the 'quasi-necessary' doctrine of signs, set out above.

[21]Elsewhere we find Peirce preferring the word 'innate' to '*a priori*' (CP4.92, 1893), and aligning the 'primitive' with the '*a priori*' (W5:236, 1885).

[22]They take this rejection to be the 'minimal sense' of the term 'naturalism' (De Caro and Macarthur 2004, p. 14).

natural sciences; and 2) the denial that the results of philosophy play a foundational
role with respect to the sciences. (De Caro and Macarthur 2004, p. 6)

The one-way relationship of principle-dependence between philosophy and the
other sciences seems to set it up as a kind of first philosophy.[23] I argued in the pre-
vious chapter that principle-dependence gives philosophy a kind of foundational
status for the other sciences. This foundational status also gives authority to philo-
sophy insofar as it has the authority to criticise the philosophical assumptions of
various other sciences.[24] To establish that Peirce adopts a kind of first philosophy
is not, then, very difficult. The aim of this section is rather to provide arguments
for the hierarchical relationship between cenoscopy and idioscopy. I offer two such
arguments from Peirce, one 'positive' the other 'negative'.

The positive argument is derived by considering Peirce's motivations for think-
ing there must be a science concerned with any possible scientific intelligence.
That such a 'quasi-necessary' science is needed is defended on the basis of an ac-
count of scientific inquiry as requiring abductive, in addition to inductive and de-
ductive, reasoning. It is also motivated on the basis of the regulative hopes that
Peirce takes to guide practice of scientific inquiry. The need for abductive reas-
oning leads us to need an account of the inquirer, while the regulative hopes of
inquiry motivate us to think there must be an account of *all possible* scientific
inquirers.[25]

The negative argument challenges any proposal which seeks to either ground
philosophy in, or replace it with, some special science or other. I will use the gen-
eric term 'idioscopism' to refer to this class of views. Peirce himself challenged two
variants of this proposal: Sigwart's psychologism and Dewey's conception of logic
as a 'natural history of thought'. I will draw on his arguments against both. Ac-
cording to Peirce, such proposals threaten the achievement rational self-control.
Idioscopism threatens rational self-control by undermining the hopes which reg-
ulate scientific inquiry. The Peircean will not think the gains presented by these
proposals are worth the cost.

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[23]Peirce himself uses the term '*philosophia prima*' to refer to cenoscopy (EP2:372, 1906).

[24]Here we can take up Haack's metaphor in which Peirce makes metaphysics the 'Queen of the
Sciences', but as a constitutional monarch rather than an autocratic rules (Haack 2008, pp. 108–9).

[25]Hopes, like beliefs, determine our actions. They are distinguished in so far as hopes can outrun
our expectations. If I believe that there is a black pen in the drawer I will expect to see it when I
open the drawer. If I merely hope that there is a pen in the drawer, then I will not necessarily expect
to see it there. Belief and hope are also related in so far as I cannot rationally hope for something
that I believe to be impossible (Cooke 2006, pp. 139–141).

Before turning to these arguments, it is worth heading off a potential source of puzzlement. This section offers a series of arguments for the hierarchical relations that Peirce suggests hold between various theoretical sciences. However, in the previous chapter it was suggested, in passing, that Peirce adopts an empirical method for generating the hierarchy. That is, Peirce presents himself as merely showing the reader how the sciences in his day are in fact related by looking at the way those sciences are practised (e.g. EP2:131–132, 1902).[26] He even suggests that the relations between the sciences could change as science develops. For instance, we might imagine that some kind of neo-vitalism might switch the relationship between biology and physics. In this imagined future, the objects of physics would be considered special cases of the objects of biology. Biology would, in this situation, provide principles to physics.

While the use of the empirical method may be true of the classification of the idioscopic sciences that Peirce provides, it is hard to believe that he follows it when classifying the sub-disciplines of philosophy. For one thing, Peirce seems to be *proposing* that we organise philosophy in a certain way, and proposing it for philosophical reasons.[27] It may be that, since Peirce conceives of philosophy as 'quasi-necessary', its appropriate structure can be derived by this kind of reasoning. In any case, we should move on into the following sections with the thought that Peirce is proposing that philosophy should be structured in a certain way, rather than reporting his views about the divisions of philosophy as they appeared to him in his day.[28]

2.1 Abduction and the Need for Cenoscopy

2.1.1 Abduction as 'Internal Observation'

The previous chapter introduced Peirce's metaphor in which scientific inquiry is depicted as the attempt to navigate a bog. In the lead up to that metaphor, Peirce introduces the need for abduction in scientific research:

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[26]The hierarchy is 'concerned not with all possible sciences, nor with so many branches of knowledge, but with sciences in their present condition, as so many businesses of groups of living men' (EP2:258, 1903).

[27]Other Peirce interpreters have made similar distinctions. Hookway, for instance distinguishes between the pre-logical and post-logical sciences on the hierarchy (Hookway 1985, pp. 77–79).

[28]That this is the best way to approach this material should be made clear by the fact that 'phaneroscopy', a science recognised as such by one person (Peirce), is an important part of his hierarchy. Unless Peirce thought of himself as the entire social practice of philosophy, then he cannot have taken himself to be merely reporting how philosophy is practised.

> The only end of science, as such, is to learn the lesson that the universe has to teach
> it. In induction it simply surrenders itself to the force of facts. But it finds at once,—I
> am partially inverting the historical order to state the process in its logical order,—it
> finds I say that this is not enough. It is driven in desperation to call upon its inward
> sympathy with nature, its instinct for aid, just as we find Galileo at the dawn of mod-
> ern science making his appeal to *il lume naturale*. But insofar as it does this, the solid
> ground of facts fails it. It feels from that moment that its position is only provisional.
> (EP2:55, 1898)

Induction is presented here as a kind of passive opening up to facts. Finding this
is insufficient, science turns to something internal rather than external. This in-
ternal thing, 'instinct' or 'inward sympathy with nature', is aligned, earlier in the
same text, with what he calls 'retroduction':

> As for retroduction, it is itself an experiment. [...] It begins always with a colligation,
> of course, of a variety of separately observed facts about the subject of the hypothesis.
> [...][29] And then comes an observation. Not, however, an external observation of the
> objects as in induction, nor yet an observation made upon the parts of a diagram, as
> in deduction; but for all that just as truly an observation. For what is observation?
> What is experience? It is the enforced element in the history of our lives. It is that
> which we are constrained to be conscious of by an occult force residing in an object
> which we contemplate. The act of observation is the deliberate yielding of ourselves
> to that *force majeure*,—an early surrender at discretion, due to our foreseeing that we
> must, whatever we do, be borne down by that power, at last. Now the surrender which
> we make in retroduction is a surrender to the insistence of an idea. The hypothesis,
> as the Frenchman says, *c'est plus fort que moi*.[30] It is irresistible; it is imperative.
> (EP2:46–47, 1898)

On this view, observation is involved in all kinds of reasoning. This should not be
too surprising given Peirce's view, set out in the previous chapter, that all of the
theoretical sciences are observational. The kind of observation involved in retro-
duction is 'internal'. In retroduction, we gather the facts to be explained together.
Having performed this 'colligation', various ideas that might explain the facts force
themselves upon us. Combining this idea with the previous passage, we see that
the 'occult force' behind the compulsion involved in retroductive inferences is the
force of 'instinct' or the 'inward sympathy with nature'.[31]

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[29]The term colligation is due to William Whewell. It means something like collecting the facts
and considering them together. The ellipsis here covers a short passage where Peirce praises
Whewell as a logician and scientist, and as providing a much better account of the inductive sci-
ences than Mill did. I will very briefly discuss the Mill-Whewell debate in a moment.

[30]A literal rendition of this expression is 'it is stronger than me'. The phrase carries the con-
notation of being compelled by something stronger than reason.

[31]In an earlier lecture from the same series, Peirce provides a compact statement of the distinc-
tion between retroduction, induction, and deduction:

> Reasoning is of three kinds. The first is necessary, but it only professes to give us information concerning
> the matter of our own hypotheses, and distinctly declares that if we want to know anything else, we must

In later texts, Peirce uses the term 'abduction' for what he called 'retroduction' in the previous passages:

> Abduction is the process of forming an explanatory hypothesis. It is the only logical operation which introduces any new idea; for induction does nothing but determine a value and deduction merely evolves the necessary consequences of a pure hypothesis.
>
> Deduction proves that something *must* be, Induction shows that something *actually* is operative, Abduction merely suggests that something *may be*.
>
> Its only justification is that from its suggestion deduction can draw a prediction which can be tested by induction and that, if we are ever to learn anything or to understand phenomena at all, it must be by abduction that it is brought about. (EP2:216, 1903)

Peirce goes on to suggest that our success in abduction can best be made sense of if it is based in an 'Insight...into the Thirdnessess, the general elements, of Nature', and that this insight 'is at the same time of the general nature of Instinct, resembling the instincts of the animals' (EP2:217–218, 1903). 'Abduction' and 'retroduction' are, then, two terms for the same process. In both cases, something internal to the inquirer is appealed to rather than simply opening ourselves up to external experience.

That induction, by itself, is insufficient for scientific inquiry should not be particularly controversial. In the previous generation this was an important aspect of the debate between Whewell and Mill that Peirce references in 'The First Rule of Logic'. Mill thought that the chief difficulty in Kepler's research consisted in getting himself into to a position where he could just see that, e.g., the orbit of Mars around the Sun is elliptical. Whewell, on the other hand, emphasised the need to bring the right idea to the observations. On Whewell's view, observations can never, by themselves, be sufficient. In the case of Kepler, the necessary abductive moves included rejecting the previously held idea that planetary orbits must be understood in terms of either regular polygons or platonic solids.[32]

Like Whewell, Peirce's picture of the development of science introduces, as an essential feature, the inquirer. For both, the activity of hypothesis-making on the part of inquirers is an irreducible feature of scientific activity. For Peirce, the success of science depends on the 'instinct', or 'inward sympathy with nature' of the inquirer. This inward sympathy explains our tendency to guess right more often than

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go elsewhere. The second depends upon probabilities. [...] The third kind of reasoning tries what *il lume naturale*, which lit the footsteps of Galileo, can do. It is really an appeal to instinct. (EP2:32, 1898)

The first kind of reasoning is deduction, the second induction, and the third retroduction/abduction.

[32]For an account of the dispute between Mill and Whewell which highlights the example of Kepler see, e.g., Snyder 2010 or Lugg 1989.

chance would suggest (c.f. EP2:216–218, 1903). We might hope, then, to provide some kind of philosophical account of the nature of the inquirer and of what the inquirer brings to the task of inquiry. This is, I argue, a core function of cenoscopy.[33]

Peirce thinks that some of the hypotheses brought to inquiry by the inquirer are too general to be tested by any special science. Peirce offers a few examples in the course of making an argument for the unavoidability of metaphysics, where he argues as follows:

> the special sciences are obliged to take for granted a number of most important propositions, because their ways of working afford no means of bringing these propositions to the test. In short, they always rest upon metaphysics. At one time, for example, we find physicists, Kelvin, Maxwell and others, assuming that a body cannot act where it is not, meaning by 'where it is not' where its lines of force do not centre. At another time, we find them assuming that the laws of mechanics (including the principles of metric geometry) hold good for the smallest corpuscles. Now it is one thing to infer from the laws of little things how great things, that consist of little things, will act; but it is quite a different thing to infer from the phenomena presented by great things how single things billions of times smaller will act. It is like inferring that because in any country one man in so many will commit suicide, therefore every individual, once in such a period of time, will make an attempt at suicide. The psychical sciences, especially psychology, are, if possible, even more necessitated to assume general principles that cannot be proved or disproved by their ordinary methods of work. The philosopher alone is equipped with the facilities for examining such 'axioms' and for determining the degree to which confidence may safely be reposed in them. Find a scientific man who proposes to get along without any metaphysics—not by any means every man who holds the ordinary reasonings of metaphysicians in scorn—and you have found one whose doctrines are thoroughly vitiated by the crude and uncriticized metaphysics with which they are packed. (CP1.129, c. 1905)

The importance of this passage for the motivation of metaphysics will be taken up in further detail in later chapters. For now, we need only note that the hierarchy presents metaphysics as depending on the rest of philosophy as well. Philosophy is the only discipline that can test the assumptions upon which the various special sciences depend.[34] In this passage, Peirce offers us some examples of the assumptions that he has in mind. One is a general assumption about causation: that bodies cannot act where they are not. The other is a mereological assumption concerning the relationship between parts and wholes. Peirce does not here provide

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[33]One way of thinking about the three kinds of theoretical science is to think of them as primarily associated with one of the three kinds of reasoning. Idioscopy is closely associated with inductive reasoning, mathematics (schematoscopy) is closely associated with deductive reasoning, and, if the arguments of this thesis are correct, cenoscopy is closely associated with abductive reasoning. One reason in favour of this last claim, which we are already in a position to see, is that cenoscopy is the study of the necessary features of the *inquirer* and proceeds by a kind of internal observation.

[34]This is not because philosophers have access to any additional kind of experience than other scientists. Rather, they are better at reasoning on the basis of common experience.

an example of a philosophical assumption made by psychology. He suggests elsewhere that psychology depends more on logic than metaphysics (CP1.250, 1902).[35] Peirce's claim is that these assumptions are not able to be tested by the special sciences themselves, and so some more general science is needed. It will be worth considering some examples in a bit more detail.

General accounts of causation, mereology, and inferential validity are traditional parts of philosophy. On top of these, and as a result of the common-sensism outlined above, Peirce also thinks that there are a series of indubitable, but essentially vague, assumptions made by the special sciences. Moreover, he takes the articulation of these assumptions to be one of the jobs of cenoscopy. For instance, we assume that, at least in some respect, 'there is an element of order in the universe' (CP6.496, c. 1906). Peirce tends to criticise any formulation of this assumption that is more precise than this. On Peirce's view 'when anybody undertakes to say precisely what that order consists in, he will quickly find he outruns all logical warrant' (CP6.496, c. 1906). One such unwarranted characterisation of the order that obtains in the universe is hard determinism.[36]

If the 'ways of working' of idioscopy provide no means of putting the propositions they depend on to the test, then there is good reason to think that idioscopy is principle-dependent on cenoscopy. The examples we have been considering suggest that this dependence is the result of the nature of experimentation in the special sciences. If Peirce is right, then all scientific experimentation requires abduction before any induction is attempted. This is easiest to see in the case of the vague assumption that the behaviour of the world is regular 'in some respect'. As Peirce says, attempting to confirm this belief by means of experiment 'would vie with adding a teaspoonful of saccharine to the ocean in order to sweeten it' (CP5.522, c. 1905). Note, also, that the act of engaging in an experiment assumes that that the results of a series of particular events are telling about some more general phenomena. The belief that there is some order or regularity in the universe is an

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[35]One place in which this dependence manifests is in the classification of the actual cognitive processes studied by empirical psychology. Hookway has argued that Peirce thinks any attempt to understand the psychology of inferential processes will require the psychologist to already have a conception of when an inferential process is valid or invalid. That is, the psychologist will assume a logical principle (Hookway 2012d, pp. 94–95).

[36]Peirce criticises this view under the name 'necessitarianism'. Necessitarianism is, Peirce says, 'the common belief that every single fact in the universe is precisely determined by law' (W8:111/EP1:298, 1892). By using the word 'common' here, Peirce does not mean to align the belief with 'common sense'.

example of the kind of common-sense belief that Peirce thinks cannot be abstracted away when we consider the possible scientific intelligence.[37]

In the passage quoted above, Peirce offered metaphysical assumptions about causation and mereology as examples of the kind of principles that the natural sciences take from philosophy. However, unlike in the case of the belief that the world is regular in some respect, it is less clear that either the affirmation or denial of the proposition that a body cannot act where it is not would involve a kind of performative contradiction. That is, we don't assume either the truth or falsity of this belief simply by virtue of inquiring. It is also less clear that this assumption cannot be tested by special-scientific means. However, in any idioscopic experiment will have to assume *some* general principle or other of this sort. So, for instance, to test whether a body can act where it is not might be managed by finding some particular phenomenon which we fail to explain in any other way. However, the assumptions that condition our conception of the space of possible explanations will themselves be metaphysical, and not themselves testable in the experiment in question. Rather, they call for a more general reflection on the space of possibilities. This is the kind of reflection that is only available from the cenoscopic perspective.[38]

The examples we have considered so far have all been metaphysical. Peirce takes idioscopy to also depend on logical principles. For instance, they are needed in the design and implementation of experiments.[39] As in the case of metaphysical principles, this dependence relationship is often easiest to see when it is going wrong. We can look at historical examples of scientific practice and see that if the investigators at the time had adopted different methods then they would have been able to advance much more rapidly. Two examples that Peirce uses to illustrate this have come up already. We have looked at the famous passage on Lavoisier from 'The Fixation of Belief', in which Peirce notes the new recognition of the role of hands-on experimentation, and Lavoisier's ability to let his experimentation feed

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[37]We could go further, by offering some arguments to the conclusion that anything that could learn from experience must take the world to be regular in some respect. Some arguments of this sort will be developed in later chapters.

[38]A further point which might be added here is that the assumptions which we might bring from cenoscopy to idioscopy can unduly constrain idioscopy. This will be considered in more detail in Chapter Four.

[39]According to Peirce logic is the '*method of methods*' and that 'Logic will not undertake to inform you what kind of experiments you ought to make in order best to determine the acceleration of gravity, or the value of the Ohm; but it will tell you how to proceed to form a plan of experimentation' (W4:378/CP7.59, 1882).

back into the task of hypothesis generation. On Peirce's view this development had been blocked by bad logical principles. Knowledge, for the alchemists that the new science of chemistry challenged, required a sudden burst of insight with a testing phase which could only answer questions in the negative. We can see the effects of logic in this kind of proto-science. This suggests that early alchemy-chemistry was indeed dependent on logic. The appropriate solution to problem of bad logic affecting our idioscopic investigations is not to attempt to avoid logical principles. This would be impossible, since even methodological anarchism is a logical principle. Instead, we should attempt to improve our logic.

Peirce also presents the Ptolemaic astronomers as revealing the effects of a flawed logic:

> It is impossible to maintain that the superiority of the science of the moderns over that of the ancients is due to anything but a better logic. No one can think that the Greeks were inferior to any modern people whatever in natural aptitude for science. We may grant that their opportunities for research were less; and it may be said that ancient astronomy could make no progress beyond the Ptolemaic system until sufficient time had elapsed to prove the insufficiency of Ptolemy's tables. The ancients could have no dynamics so long as no important dynamical problem had presented itself; they could have no theory of heat without the steam-engine, etc. Of course, these causes had their influence, and of course they were not the main reason of the defects of the ancient civilisation. Ten years' astronomical observations with instruments such as the ancients could have constructed would have sufficed to overthrow the old astronomy. The great mechanical discoveries of Galileo were made with no apparatus to speak of. If, in any direction whatever, the ancients had once commenced research by right methods, opportunities for new advances would have been brought along in the train of those that went before. But read the logical treatise of Philodemus; see how he strenuously argues that inductive reasoning is not utterly without value, and you see where the fault lay. When such an elementary point as that needed serious argumentation it is clear that the conception of scientific method was almost entirely wanting. (W4:378–379/CP7.60, 1882)

The issue that this passage is directed to is how to explain the relative success of heliocentric astronomy and the geocentric system of the Ptolemaic astronomers. Peirce suggests that it is not that they lacked the spirit of science.[40] Nor were they simply less clever than us or lacking in necessary experimental equipment. Rather, they were held back by their faulty logic. Peirce's example in this case is the disdain for inductive inference evidenced by extent to which it needed defending in the work of Philodemus and others. Here, as in the chemical case, faulty logical

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[40]Although they may have had the 'spirit' in diminished form. According to Peirce '[t]he difficulty [with including ancient authors amongst scientists] is that one of the things that coheres to that undeveloped state of intelligence is precisely a very imperfect and impure thirst for truth. Paracelsus and the alchemists were rank charlatans seeking for gold more than for truth' (EP2:131, 1902).

principles prevented inquirers from engaging in well-conducted experimentation. Again, the solution is not to abandon logic, but to do it better.

In each case considered in this section, the kind of experimental activity that the special sciences are engaged in is found to depend on a set of assumptions that cannot themselves to put to the test by the same methods. We have seen the role of metaphysical assumptions about causation and mereology, the role of a normative understanding of reasoning in the psychological sciences, and logical/epistemological principles about what counts as knowledge and what methods might be used to attain it.[41]

2.1.2   From The Inquirer to Any Possible Inquirer

If the claim is accepted that the inquirer always brings something to inquiry by way of abductive assumptions that are unable to be tested in idioscopic inquiry, then we have good reason to think that some kind of account of the inquirer is wanted to account for this dimension of inquiry. We do not, however, have motivation for thinking that cenoscopy, a science which attempts to take stock of the kind of abductive assumptions brought to bear by *any possible* inquirer, is the answer to this need. It could be 'idioscopy all the way down'. When the need arises, for instance, we could engage in some psychology to consider the ways in which our various instincts and biases influence inquiry. Sociology and other critical social sciences would have a role to play in here. Peirce's cenoscopy is not supposed to undermine this critical work. Rather, cenoscopy is a critical discipline that is being proposed in addition to it, and as foundational for it.

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[41]One might object to the arguments so far presented on the grounds that they deploy the following pattern: any idioscopic experiment depends on some assumption which is not itself susceptible to idioscopic research, if not susceptible to idioscopic research then it must be susceptible to cenoscopic research, therefore idioscopy depends on cenoscopy. This excludes a few options. For one, it could be that the assumptions in question are just unable to be properly criticised from *any* perspective. Against this possibility, the Peircean will offer arguments couched in terms of regulative hopes of inquiry. I will deploy an argument of this sort in the next section.

One might also note that mathematics is an option that could play a foundational role with respect to the special sciences. That is, idioscopy could depend merely on 'schematoscopy' rather than cenoscopy. It is indeed true that Peirce thinks mathematics plays a foundational role for the other theoretical sciences (see Chapter One). All sciences have their mathematical element (CP1.247, 1902). But the assumptions that we have highlighted in this section cannot be simply reduced to mathematics. They concern the real world, rather than, as Peirce takes mathematics to study, the space of possibilities in general (e.g. EP2:39–40, 1898). The assumption that, say, an entity can act where it is not, is not excluded or adopted for merely mathematical reasons, it must find some rationale in actual experience. This is a consequence of the claim, referenced earlier, that mathematics is a hypothetical rather than a positive science.

The proposal that we might just, when the need arises, engage in idioscopy with respect to some particular abductive assumption that some particular species or culture bring to bear in inquiry is not entirely un-Peircean. For instance, with respect to habits in general, within which category Peirce includes beliefs, we find him saying:

> Among the things that the reader, as a rational person, does not doubt is that he not merely has habits, but also can exert a measure of self-control over his future actions; which means however, *not* that he can impart to them any arbitrarily assignable character, but, on the contrary, that a process of self-preparation will tend to impart to action (when the occasion for it shall arise) one fixed character [...] (EP2:337, 1905)

The power of habit development, and *a fortiori*, belief development does not enable us to change our entire collection of beliefs in one go. Rather, we are to think of ourselves in line with Peirce's story of science as traversing a bog. We shift our footing when the need arises or can be clearly foreseen. Given that Peirce allows for this kind of adjustment of our beliefs *in medias res*, why engage in the specific kind of foundational work that Peirce encourages?

To see why an account of *any possible* inquirer is relevant, we need to return to Peirce's conception of truth as the aim of inquiry.[42] In the last chapter we introduced the idea that truth includes a notion of 'externality': we aim to fix our beliefs to something not determined by us.[43] The concept of 'externality', and the very closely related concept of 'reality', is set out by Peirce in his review of Fraser's Berkeley collection:

> But observing that 'the external' means simply that which is independent of what phenomenon is immediately present, that is of how we may think or feel; just as 'the real' means that which is independent of how we may think or feel *about it*; it must be granted that there are many objects of true science which are external, because there are many objects of thought which, if they are independent of that thinking whereby they are thought (that is, if they are real), are indisputably independent of all *other* thoughts and feelings. (W2:470/EP1:90, 1871)

This characterisation of 'reality' introduces the idea that what some particular group of people think *about the object in question* is important, whereas externality concerns what people think in general. If the object in question changes as a result of my deciding to think of it in a different way (excluding cases in which that change

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[42]A full discussion of the notion of truth that Peirce deploys will wait until Chapter Three.

[43]In the previous chapter we saw that internal or impermanent things by which be might fix belief include tenacity, authority, and fashion.

in thought causes someone to physically intervene with the object), then it isn't external.[44]

The upshot here is that whatever the 'external permanency' associated with truth, it cannot be determined by contingent features of some group of inquirers. It can't be, for instance, that this group of inquirers reach such and such conclusions, while this other group of inquirers, more or less different from the first, reach some other conclusion regarding the same question. If we hold on to the hope that belief can be fixed by an 'external permanency' alongside the recognition that the inquirer always brings something to bear in inquiry, then we must also hope that there is some, however abstract, commonality between inquirers such that consensus in the limit is possible.

On Peirce's account, 'external' and 'real' come to mean something not determined by a particular entity or particular collection of entities, but which may be determined by the nature of thought in general. We find Peirce expressing this view nicely slightly earlier in the Berkeley review:

> The arbitrary will or other individual peculiarities of a sufficiently large number of minds may postpone the general agreement in that opinion indefinitely; but it cannot affect what the character of that opinion shall be when it is reached. This final opinion, then, is independent, not indeed of thought in general, but of all that is arbitrary and individual in thought; is quite independent of how you, or I, or any number of men think. Everything, therefore, which will be thought to exist in the final opinion is real, and nothing else. (W2:469/EP1:89, 1871)

We will return to the 'final opinion', and the role of 'hope', in subsequent chapters.

The positive case for cenoscopy as first philosophy that we have just considered starts with the recognition of the ineliminable role of abduction, and thus of the creative contribution of the inquirer in the project of inquiry. Having acknowledged this, we turned to the general assumptions that condition our hypothesis making in idioscopic inquiry. These are adopted on the basis of a kind of abduction, rather than being simply given in experience. One of the roles of cenoscopy is to articulate and criticise these abduction-conditioning assumptions. This gives cenoscopy authority over the assumptions brought to bear in theoretical inquiry. Moreover, we saw that bad cenoscopy can have negative downstream effects in idioscopy. Work in cenoscopy is foundational at least in so far as it helps idioscopy to avoid these

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[44]A closely related definition, of 'real', runs as follows:

> 'Real' is a word invented in the thirteenth century to signify having Properties, i.e. characters sufficing to identify their subject, and possessing these whether they be anywise attributed to it by any single man or group of men or not. (EP2:434, 1908)

pitfalls. To get to this point, however, we needed to adopt some substantive views about the hopes that motivate theoretical inquiry. These, touching on the issues of truth and reality in Peirce, are loose threads which will need to be tied up in following chapters.

2.2 The Threat of Idioscopism

Some progress in tying these threads can be made already, as we consider the case against 'idioscopism'. In diagnosing what is wrong with this series of proposals we will need to consider Peirce's account of rational self-control. Our subsequent consideration of truth and reality will in large part turn on how best to achieve rational self-control.

Recall that 'idioscopism' is defined as any proposal which either replaces philosophy with some special science (that is, any variety of idioscopy) or 'grounds' philosophy in idioscopy. In Peircean hierarchical terms, idioscopism presents some idioscopic sciences as providing principles to cenoscopy. Recall also, that a principle is some proposition which applies to all of the objects in the domain of the science which receives the principle.

2.2.1 Rational Self-Control

On Peirce's understanding, logic aims at giving us deliberate control over our thought. I follow Hookway in using the phrase 'rational self-control' to capture this aim.[45] Peirce thinks that making the general assumptions that idioscopic inquiry depends on explicit and criticisable is an important part of the attempt to gain self-control. We are not maximally in control of our reasoning and beliefs if they rest on arbitrary and uncontrolled premises or inference patterns. Peirce's conception of self-control in general, and of rational self-control in particular, is developed by the central division of cenoscopy: the normative sciences. One of the reasons Peirce refuses to allow philosophy to be based on the results of the natural or social sciences is that such an arrangement would undermine rational self-control.

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[45]As far as I am aware, Peirce does not use the phrase himself. He does use the similar phrase 'logical self-control' (e.g. EP2:347, 1905). Hookway's term helps to indicate that Peirce is interested in our control over our beliefs and inferences in general, rather than with our merely following the rules of formal logic.

The normative sciences consider the conformity of feeling, action, and thought to an ideal. Peirce summarises his conception of the normative sciences as follows:

> Normative Science has three widely separated divisions (i) *Esthetics*; (ii) *Ethics*; (iii) *Logic*.
>
> Esthetics is the science of ideals, or of that which is objectively admirable without any ulterior reasons. I am not well acquainted with this science, but it ought to repose on phenomenology. Ethics, or the science of right and wrong, must appeal to esthetics for aid in determining the *summum bonum*. It is the theory of self-controlled, or deliberate, conduct. Logic is the theory of self-controlled, or deliberate, thought; and as such must appeal to ethics for its principles. (EP2:260, 1903)

According to Peirce, deliberate conduct (including thought), is conduct that is carried out for some end. We act deliberately when we have some purpose. The normative sciences, then, provide a general account of the kinds of ends to which feeling, thought, and action might be directed. They also attempt to articulate an ultimate ideal (or *summum bonum*). This ultimate end is ultimate in so far as it is an ideal which could be endorsed in any circumstance (EP2:202, 1903).

Peirce eventually articulates each of these disciplines in terms of habits and their development.[46] Logic becomes the study of habits of belief and inference, ethics the study of habits of conduct in general, and esthetics the study of habits of feeling (EP2:377–378, 1906). Whatever the ideal habit of feeling is, to play the role that Peirce assigns for it, we must have some control over it (otherwise esthetics would not be a normative science), and it must enable us to criticise our ideals for conduct.

A core feature of Peirce's pragmatism is its alignment of the content of beliefs with habitual conduct. To believe something is to have certain habits of deliberate conduct. Here we mean 'deliberately' in a way that makes sense of Peirce's claim that '[i]f a man really believes that alcohol is injurious to him, and does not choose to injure himself, but still drinks for the sake of the momentary satisfaction, then he is not acting deliberately' (EP2:12, 1895). To act deliberately is, again, to act in order to achieve your ends. Developing beliefs is then a certain way of developing habits of deliberate conduct. Peirce summarises this kind of habit-development as follows:

> logical criticism is limited to what we can control. In the future we may be able to control more but we must consider what we can now control. Some elements we can

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[46]We have already made reference to Peirce's struggles to include ethics and esthetics within the normative sciences. Peirce also struggled to figure out how each related to the idea of self-controlled habit development. This was particularly true of esthetics. Vincent Potter traces out this development in detail (Potter 1967, pp. 25–51).

control in some limited measure. But the content of the perceptual judgment cannot be sensibly controlled now, nor is there any rational hope that it ever can be. Concerning that quite uncontrolled part of the mind, logical maxims have as little to do as with the growth of hair and nails. We may be dimly able to see that, in part, it depends on the accidents of the moment, in part on what is personal or racial, in part [on what] is common to all nicely adjusted organisms whose equilibrium has narrow ranges of stability, in part on whatever is composed of vast collections of independently variable elements, in part on whatever reacts, and in part on whatever has any mode of being. But the sum of it all is that our logically controlled thoughts compose a small part of the mind, the mere blossom of a vast complexus, which we may call the instinctive mind, in which this man will not say that he has *faith*, because that implies the conceivability of distrust, but upon which he builds as the very fact to which it is the whole business of his logic to be true. (EP2:240–241, 1903)

On Peirce's account, self-control is not complete self-creation. That is, we can't just take on and throw off habits at will (EP2:337, 1905). Rather, it starts with the idea that we have some control over our habits which, while we can be convinced that it has limits, does not have any definite limits that can be assigned in advance.[47] In the passage just quoted, Peirce holds that we cannot just believe at will.[48] However, by reflection and experimentation we can take responsibility for our beliefs to an ever greater degree. This is rational self-control of belief.[49]

Logic is the study of reasoning and reasoning is merely a special case of conduct. The core of normative logic is, then, habits of reasoning. These habits must be developed if one is to achieve rational self-control. This conception of logic includes, but is not limited to, the study of deductive logic and formal systems. It includes a theory of signs that captures some of what is presently studied in philosophy of language and speech act theory,[50] an account of the various forms of argument and their strengths and weaknesses, and finally a general study of the methodology of inquiry. The latter two parts of logic include much which is now considered part of the philosophy of science and epistemology. Logic, as a normative science, is also dependent upon ethics and aesthetics. We have already seen one example of Peirce making logic depend on ethics: he takes from ethics the principle that that which cannot be controlled cannot be criticised, and then applies it to the special case of

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[47]This is a theme which Peirce returns to regularly in his late attempts to set out his version of pragmatism (e.g. EP2:339, 1905; and 347, 1905).

[48]Peirce took this to be an important difference between his version of pragmatism and the kind which endorses a Jamesian 'will to believe' (c.f. James 1896).

[49]There is an irony here that in order to gain self-control of our beliefs, we must more and more submit them to the test of external experience. That is, we fail to gain rational self-control in so far as we deploy the more 'internal' methods of tenacity, authority, or fashion (c.f. EP1:117-120, 1877).

[50]For recent attempts to connect Peirce's semeiotic theories with contemporary philosophy of language see Atkin 2008.

inferences and belief. There are beliefs and inferences which are, in Peirce's terms 'acritical', they cannot be criticised because they cannot be controlled (EP2:357, 1905).

If logic is the study of the development of habits of reasoning, and ethics is the study of the development of habits of conduct, then esthetics is best understood as the development of habits of feeling. This progression can be seen in the following passage:

> To return to self-control, which I can but slightly sketch, at this time, of course there are inhibitions and coördinations that entirely escape consciousness. There are, in the next place, modes of self-control which seem quite instinctive. Next, there is a kind of self-control which results from training. Next, a man can be his own training-master and thus control his self-control. When this point is reached much or all the training may be conducted in imagination. When a man trains himself, thus controlling control, he must have some moral rule in view, however special and irrational it may be. But next he may undertake to improve this rule; that is, to exercise a control over his control of control. To do this he must have in view something higher than an irrational rule. He must have some sort of moral principle. This, in turn, may be controlled by reference to an esthetic ideal of what is fine. There are certainly more grades than I have enumerated. Perhaps their number is indefinite. The brutes are certainly capable of more than one grade of control; but it seems to me that our superiority to them is more due to our greater number of grades of self-control than it is to our versatility. (CP5.533, c. 1905)

Here we see that, as we go 'up the ladder' of self-criticism, the principles we deploy become more and more general. Without going into too much detail, we can see that as self-control increases we gain the ability to take ownership of more and more general principles of conduct. So, for instance, one might have a series of practical skills all of which one is cultivating at once. One might, to return to Peirce's list of practical sciences, be spending a few hours pigeon fancying and doing some gold-beating here and there, while also attempting to engage in theoretical inquiry and maintain a series of personal relationships. Each of these portions of conduct might be subject to development on their own terms. But one could also seek to attain a higher degree of self-control by applying a moral principle concerning the coherence of these various activities. This is the level of self-control at which, say, reflections about 'work-life balance' on the one hand, or commitment to a single vocation, on the other, might appear. One might then criticise those ethical principles on the grounds of some higher 'esthetic ideal'. Such an ideal would not just apply to human conduct, or even conduct in general, but perhaps to things in general. Perhaps, for instance, one attempts to decide between a commitment to work-life balance or to a single-minded devotion to some one goal on the basis

of what you think would make an admirable life in general, and which applies equally to other kinds of object. In this case, perhaps reflections on how the parts of various objects can be in harmony with one another.[51]

So far, I have not said anything about the end towards which the development of habits tends. However, we have already seen how Peirce will attempt to discover it. Peirce takes the appropriate method for uncovering the *summum bonum* to be the abstractive method of cenoscopy. For instance, in criticising the view, defended by the statistician Karl Pearson, that the ultimate aim of scientific inquiry is the stability of society, he directs us to imagine possible situations in which such an aim could not be coherently adopted:

> Professor Pearson's aim, 'the stability of society,' which is nothing but a narrow British patriotism, prompts the *cui bono* at once. I am willing to grant that England has been for two or three centuries a most precious factor of human development. But there were and are *reasons* for this. To demand that man should aim at the stability of British society, or of society at large, or the perpetuation of the race, as an *ultimate* end, is too much. The human species will be extirpated sometime; and when that time comes the universe will, no doubt, be well rid of it. (EP2:60, 1901)

Here, we may start by being directed towards the stability of some society or other, but we find that there are situations we can imagine in which we would have to give up that aim. Leaving Peirce's imagined end of the human race aside, we might instead appeal to the scenario, perhaps actual, in which some much wider social solidarity is needed. Or perhaps, we imagine a scenario in which the continuation of British society is in fact a hindrance to what we realise are higher aims.

Peirce's conception of the aim that we reach when attempting to abstract away from all non-ultimate aims is revealed in the following:

> The creation of the universe, which did not take place during a certain busy week, in the year 4004 B.C., but is going on today and never will be done, is this very development of Reason. I do not see how one can have a more satisfying ideal of the admirable than the development of Reason so understood. The one thing whose admirableness is not due to an ulterior reason is Reason itself comprehended in all its fullness, so far as we can comprehend it. Under this conception, the ideal of conduct will be to execute our little function in the operation of the creation by giving a hand toward rendering

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[51]Peirce's own attempts at articulating the esthetic good are similarly abstract. For instance, in the Harvard Pragmatism Lectures we get the following:

> In light of the doctrine of the categories I should say that an object, to be esthetically good, must have a multitude of parts so related to one another as to impart a positive simple immediate quality to their totality; and whatever does this is, in so far, esthetically good, no matter what the particular quality of the total may be. (EP2:201, 1903)

Note that this kind of reflection is quite similar to the perfectionist tradition exemplified in Leibniz's rationalist ethics (c.f. Youpa 2016).

> the world more reasonable whenever, as the slang is, it is 'up to us' to do so. (CP1.615, 1903)

Immediately before this passage Peirce characterises 'reason' as something which by nature tends to become embodied, but never can be fully embodied. For instance, to call a rock hard commits you to 'an innumerable series of conditional predictions' so that whatever happens to the rock will not 'exhaust the meaning' of calling it hard (CP1.615, 1903).[52] To truly say of a rock that it is hard is then, in a small degree, to participate in the growth of reason. Peirce, it is fair to imagine, takes us to have more to offer in terms of 'rendering the world more reasonable'.[53]

If the *summum bonum* is the growth of concrete reasonableness, by which we 'embody general ideas in art-creations, in utilities, and above all in theoretical cognition' (EP2:442, 1908), then it is worth asking how this plays out in the intellectual sphere. This will be part of the story in the next chapter. For our purposes here, we need only keep in mind that the drive to greater self-control involves coming to be cognisant of, and to criticise and endorse, general normative principles. Some of the principles, namely the esthetic ones, will apply to things in general, while others will only apply to conduct.

2.2.2   Two Idioscopisms

Peirce criticises many varieties of 'idioscopism'. In this section I consider two of the most prominent: Sigwart's psychologism and Dewey's conception of logic as a natural history of thought. In both cases a circularity worry arises. This is a problem if we aim, like Peirce, to achieve rational self-control.

Peirce frequently criticises 'German logicians', and holds the work of Christof von Sigwart up as particularly worthy of rejection.[54] Peirce presents Sigwart as holding that logical validity is ultimately a matter of the experience of a certain kind of 'logical feeling', or 'logical *Gefühl*' (EP2:166, 1903). On this view, what distinguishes good from bad reasoning is a kind of feeling which is accessible via introspective psychology. Sigwart's proposal would make logic depend on psychological (and thus idioscopic) observations. Peirce offers a series of arguments against this

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[52]Here, Peirce means 'innumerable' literally. This is necessary for the claim that 'the meaning' of calling a rock hard will never be exhausted.

[53]The ideal of 'rendering the world more reasonable' is elsewhere called the 'growth of concrete reasonableness' (e.g. CP5.3, 1902).

[54]Characteristic passages include: CP8.62–63, 1890; 2.428, 1893; 4.37, 1893; 2.346, c. 1895; 2.18–20, 1902; 2.154–174, 1902; EP2:211-2, 1903; CP8.189, 1904; 8.377, 1908; and 4.353, 1911.

position. Two can be mentioned here. Peirce argues that the logical feeling cannot be recognised without a prior conception of the validity of inferences (EP1:169, 1903).[55] Peirce also, playfully, notes that his own objections to Sigwart highly stimulate his own logical *Gefühl*. There is thus a sense in which Sigwart's view is self-refuting. Peirce presents this challenge as follows: '[w]ere the Holy Father in Rome to take it into his head to use his Infallibility to command the Faithful, under pain of excommunication, to believe everything that any Protestant ever had said or ever should say, he would put himself into a position very much like that [which] Sigwart assumes in reducing logicality to a Quality of Feeling' (EP1:169, 1903).

Moving to Peirce's more general complaints about the influence of psychology in philosophy, we find him saying that:

> Psychology must depend in its beginnings upon logic, in order to be psychology and to avoid being largely logical analysis. If then logic is to depend upon psychology in its turn, the two sciences, left without any support whatever, are liable to roll in one slough of error and confusion. (CP2.51, 1902)

Elsewhere Peirce characterises those who adopt this kind of circularity as adopting the 'mutual support' view, according to which 'the philosophical sciences will support each other, like two drunken sailors' (CP8.167, c. 1903).[56]

By claiming that 'psychology must depend in its beginnings upon logic, in order to be psychology', Peirce is arguing that psychology depends on normative logic in order to make the distinctions it needs to make in order to pick out its objects. That is, without applying some logical principles we can't distinguish between the subject matter of logic and the subject matter of psychology. For one thing, matters of brain physiology and of introspective analysis are, Peirce thinks, confused in psychology. According to Peirce, 'there must be an application of scientific logic in order to separate the precipitate of physiology from the filtrate of logic' (CP2.43, 1902).

Peirce argues that the confusion of psychology and logic is, in part, the result of the historical development of the discipline. He holds that '[t]he logicians

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[55]As Hookway constructs the argument, we need the logical concept of validity to understand the psychological feelings associated with reasoning (Hookway 2012d, pp. 94–95).

[56]While the mutual support theory might work with the metaphor of Neurath's ship, in which inquiry is presented as a ship which has to be repaired at sea rather than in dry-dock (Cat 2014, §3). It does not work as well with the metaphor of the bog. The bog that Peirce depicts inquiry as walking along is one where we have some responsibility for the security of our footing. To leave the kind of circularity involved in the mutual support theory uncriticised would be like walking around in the bog without bothering to check our next steps.

of the period from Descartes to Kant cannot be much blamed for seeing little distinction between psychology and logic, inasmuch as the psychology of their days, whether rational or empirical, consisted in little else than a logical analysis of the products of thought, as every psychologist of our day will admit' (CP2.41, 1902). Here, Peirce has in mind the shift, which Peirce himself was involved in, from a kind of armchair psychology to a full laboratory science that attempted to integrate both observation reports and physiological data.[57]

Armchair psychology, from Descartes to Kant, is characterised by Peirce as either 'rational' or 'empirical'. Two examples will suffice to make Peirce's point about the difficulty of dividing logic from philosophy in this work. Descartes is, of course, well known for producing a 'rational psychology'.[58] Cartesian rational psychology aims to derive knowledge of the mind by means of pure reflection. In the second of his *Meditations*, Descartes wonders what 'certain and unshakeable' conclusions he can derive about himself starting from the mere certainty of his own existence (Descartes 1984, pp. 16–17). He moves on to conclude that he is 'in the strict sense only a thing that thinks' (Descartes 1984, p. 18). Having drawn this conclusion, one of his next moves is to produce a logical analysis of thought. For instance, he moves on in the third of the *Meditations* to ask what kind of thought is able to be true or false (Descartes 1984, pp. 25-6). This 'psychology' is not idioscopic, nor is it removed from what Peirce calls logical analysis.

Examples of empirical psychology can, unsurprisingly, be found in the work of the early modern empiricists. Locke, for instance, takes our knowledge of mind to be derived from the experience of reflection. Locke understands experience in terms of the reception of 'ideas'. Sensation is the receipt of ideas from external objects *via* the senses, whereas reflection is the receipt of ideas of the internal operation of our own minds (Locke 1998, Bk. 2, Ch.1, §2). A characteristically empiricist feature of Locke's psychology is that it thinks of all of our ideas as built up from the 'simple' ideas which we receive from sensation and reflection. Locke attempts to analyse all of our concepts, including empirical descriptive concepts

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[57]William James and Peirce both engaged in pioneering work in experimental psychology. James is, of course, famous for his *Principles of Psychology* (James 1890). Peirce, with his student Jastrow, published 'On Small Differences of Sensation' (W5:122–135, 1884). They argued, against Fechner, that there is no smallest perceptible difference in sensation W5:123, 1884). This may have been the first fully blinded and randomised psychological experiment (c.f. Hacking 1988, pp. 431–432). For a general account of the history of experimental philosophy, including the contributions of James, see Mandler 2011.

[58]The term 'rational psychology' is due to Christian Wolff, and makes up one of the divisions of 'special metaphysics' (Hettche 2016, §8.3).

like 'dog' or 'table', metaphysical concepts like 'substance', 'cause' and 'effect', as complexes of simple ideas. Locke's psychology, then, is a kind of logical analysis of concepts which divides them into their component parts.

The work that was newly being done in psychological laboratories in Peirce's day was not work of this sort. However, to draw the distinction between this work and modern psychological research we must be able to demarcate psychology from logic. This is only possible, Peirce thinks, from the side of logic. There is no way of siphoning off the 'logical' aspects of the empirical data without the use of logical principles. So here we have a route to the conclusion that psychology requires logic in order for it to even understand what its objects are.[59]

If we grant that psychology depends on logic in the way outlined above, then a circularity worry arises for any view that makes logic in turn depend on psychology. If this dependence holds, then we could end up with a faulty psychology on the basis of faulty logic, and that faulty psychology could in turn back up the faulty logic. There is no easy way out of this circle, since the falsity of the logic need not turn up in the experiments of the psychologist. As a result, psychology and logic might end up, as Peirce suggests, 'roll[ing] in one slough of error and confusion'.

Peirce also criticises Dewey for introducing the use of idioscopic conclusions into logic. The Deweyan proposal was to base logic in a 'natural history' of thought. Dewey presents his perspective, and the contrary approach, in the following passage:

> Thus we come back to the problem of logical theory. To take the distinctions of thought and fact, etc., as ontological, as inherently fixed in the make-up of the structure of being, is to treat the actual development of scientific inquiry and scientific control as a mere subsidiary topic ultimately of only utilitarian worth. It is also to state the terms upon which thought and being transact business in a way so alien to the use made of these distinctions in concrete experience as to create a problem which can be discussed only in terms of itself—not in terms of the conduct of life—metaphysics again in the bad sense of that term. As against this, the problem of a logic which aligns itself with the origin and employ of reflective thought in everyday life and in critical science, is to follow *the natural history of thinking* as a life-process having its own generating antecedents and stimuli, its own states and career, and its own specific objective or limit. (Dewey 1903, p. 13, emphasis mine)

Dewey's recommendation seems to be that the logician should engage in a close description of actual thinking processes, in their particular concrete situations. When engaged in Deweyan logic we might, for instance, consider the rules of

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[59]The previous path to this conclusion that we considered concerned inference exclusively. This was the argument against Sigwart's appeal to 'logical feeling'. The more general route to this conclusion concerns signs and sign-activity in general rather than just inferential validity.

thumb deployed in particular practical sciences in some detail. For instance, we might ask how a cook solves the particular problems that arise in their practice. Or, we might consider particular laboratory practices in detail. Here we would focus on, say, how myrmecologists study some particular kind of ant. This is contrasted with the kind of logic that sets up a once-and-for-all picture of what thought is, in general, and comes along with a 'metaphysical' conception of the world as also being divided up into corresponding categories (object, substance, property, etc.).

Peirce's worries about Dewey's proposal are not a direct defence of the kind of 'bad metaphysics' that Dewey criticises. Rather, Peirce is concerned with the inability of a 'natural history' to provide the kind of normative direction that Peirce wants from logic. This turns, in part on the inability of natural history to consider the gamut of not-currently-actual possibilities for thought (c.f. Hookway 2012d, pp. 107–108). Without this, we lose the necessary stand-point from which to criticise current practice. This charge is set out in a letter from Peirce to Dewey:

> You propose to substitute for the Normative Science which in my judgment is the greatest need of our age a 'Natural History' of thought or of experience. Far be it from me to do anything to hinder a man's finding out whatever kind of truth he is on the way to finding out. But I do not think anything like a natural history can answer the terrible need that I see of checking the awful waste of thought, of time, of energy, going on, in consequence of men's not understanding the theory of inference. Though you use the expression 'Natural History,' yet the two branches of Natural History, physiology and anatomy, which are as sharply sundered today as ever they were, you seem to be alluding only to the latter, since you speak of its being revolutionized by conceptions of evolution. Now the doctrine of evolution has not affected physiology either much or little, unless by lending a competing interest to anatomy and thus weakening physiology. It has certainly neither directly, nor indirectly, strengthened it. So, using the word anatomy without reference to its etymological suggestions, but simply as a designation of the sort of business that Comparative Anatomists are engaged in, you seem to conceive your occupation to be the studying out of the Anatomy of Thought. Thereupon, I remark that the 'thought' of which you speak cannot be the 'thought' of normative logic. For it is one of the characteristics of all normative science that it does not concern itself in the least with what actually takes place in the universe, barring always its assumption that what is before the mind always has those characteristics that are found there and which Phänomenologie is assumed to have made out. But as to particular and variable facts, no normative science has any concern with them, further than to remark that they form a constant constituent of the phenomenon. [...][60] If then you have a 'Natural History' (i.e. a comparative anatomy) of thought,—it is not the merely possible thought that Normative Science studies, but thought as it presents itself in an apparently inexplicable and irrational experience. (CP8.239, 1904)

The moral that Peirce wants us to draw from this is that the kind of control over thought that we want is only available to us if we go beyond descriptions of ac-

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[60]Peirce offers a series of examples here.

tual processes of inquiry. We will have to adopt, instead, the cenoscopic viewpoint. Cenoscopy, since it considers all possible inquirers, enables us to move beyond present practices by considering not-currently-actual practice which may be superior.[61]

In Dewey's defence, there are places in his *Studies in Logical Theory* in which he attempts to capture the normative dimension of logic. Dewey holds that logic has three tasks:

> Generalization of the nature of the reflective process certainly involves elimination of much of the specific material and contents of the thought-situations of daily life and of critical science. Quite compatible with this, however, is the notion that it seizes upon *certain* specific conditions and factors, and aims to bring them to clear consciousness—not to abolish them. While eliminating the particular material of particular practical and scientific pursuits, (1) it may strive to hit upon the common denominator in the various situations which are antecedent or primary to thought and which evoke it; (2) it may attempt to show how typical features in the specific antecedents of thought call out to diverse typical modes of thought-reaction; (3) it may attempt to state the nature of the specific consequences in which thought fulfils its career. (Dewey 1903, p. 7)

The first and second points are merely descriptive. The third, however, has some normative bite. Dewey asks us consider how thought, perhaps in a particular situation, might achieve its aims. We can then criticise ways of thinking on the grounds that they are more or less well adapted to achieving the given aim. Dewey thus promises that his logic will provide us with some normative guidance.

Like Dewey, Peirce allows for information from the sciences to influence our logic. We spent some time in the last chapter going over places in which Peirce thinks that our logic has developed along with developments in the natural or social sciences. A close focus on the details of the sciences and their problems is not a difference between Peirce and Dewey.[62]

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[61]In a passage in the *Minute Logic*, Peirce notes the seeming paradox that in order to provide a normative theory that will aid inquiry we need to move further away from the concrete details of our practices and engage in pure theory:

> 'The notion that a normative science is necessarily of the nature of a practical art, in having no independent value as a pure theory, is one which, no doubt, arises naturally enough from a superficial survey. [. . . but] we shall then find that, so far is it from being true that the normative character must necessarily be exclusively due to the branch of knowledge that possesses it being a mere concrete application to a practical need of a theory which, in its pure development, never considered that need [. . . Rather,] this character may equally have its origin in the circumstance that the science which presents it is so very abstract, so alien to any experiential lineage, that ideals alone, in place of positive facts of experience, can be its proper objects.' (CP2.46, 1902)

[62]In fact, we find Peirce complaining to Dewey in these terms in another letter (probably never sent). He thinks of Dewey as setting up road blocks against his own formal investigations and claims that, despite Dewey's rhetoric focusing attention on particular scientific practices, Peirce

We can grant that Peirce may be overemphasising his differences with Dewey, while holding on to his central point.[63] That is, we can endorse the view that rational self-control, if possible at all, can be attained by articulating and criticising our deepest abductive assumptions, assumptions which are deployed in any investigation we attempt. The way to do this, Peirce thinks, is by taking up cenoscopy—and thus a perspective on possible, and not merely actual, forms of inquiry. More specifically, we are to take up the normative wing of cenoscopy: aesthetics, ethics, and logic.

2.3   Anti-Idioscopism as Block on Inquiry

In the same lecture in which Peirce presents the metaphor of the bog and the necessity of abduction, he articulates the 'first rule' of logic. From this rule he derives an more famous corollary:

> Upon this first, and in one sense this sole, rule of reason, that in order to learn you must desire to learn and in so desiring not be satisfied with what you already incline to think, there follows one corollary which itself deserves to be inscribed upon every wall of the city of philosophy,

> **Do not block the way of inquiry.**

> (EP2:48, 1898, emphasis in original)

This slogan has a good claim to be the party motto of the early pragmatists. We will see in later chapters that one of Peirce's main reasons for rejecting metaphysical nominalism is that it blocks inquiry by preventing the exploration of certain important scientific hypotheses. Peirce uses this slogan to challenge a maxim of scientific practice that he claims was particularly prominent in his youth. As he states it the maxim was 'that no science must borrow the methods of another; the geologist must not use a microscope, nor the astronomer a spectroscope' (EP2:437, 1908). Such maxims unduly restrict inquiry by preventing the transferal of methods from one science to another. They thereby 'block the path' of inquiry.

According to the account of Peirce classification that I have offered, Peirce denies the possibility of using a psychological principle to back up a logical one. It is fair to ask how this is compatible with the claim that we should not block the

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himself has had much more to do with first-order scientific research in his logic than Dewey has (CP8.243–244, 1905).

[63]Peirce himself claims that he is exaggerating. He says that he is 'simply projecting upon the horizon, where distance gets magnified indefinitely, the direction of [Dewey's] standpoint as viewed from mine' (CP8.241 1904).

path of inquiry. Peirce is proposing an end to psychologistic approaches to logic. It is not much of a stretch to imagine that, if he had the power, he would reject funding for any such research project. However, the bare fact that some inquiry is stopped does not mean that Peirce's rule has been violated. The rule does not endorse a complete free-for-all *a la* Feyrabend's 'epistemological anarchism' (Feyerabend 1975). In fact, the path of inquiry can be blocked by a failure to impose sufficient restraints. In so far as psychologism in logic opens up the possibility of a vicious circularity that could undermine the prospects for rational self-control, then engaging in psychologistic research risks blocking the path of inquiry. To block the path of inquiry is to prevent it from being able to attain its end.

3 Contemporary Alternatives

So far in this chapter, we have considered what cenoscopy is and why we should think of it as foundational for the various forms of idioscopy. We've considered some of the motivations for thinking that there should be some story that can be told on the basis of observations common to any possible scientific intelligence. We want to hold together the fact that inquiry requires some active contribution from the inquirer and the hope that this dependency will not distort the eventual results of inquiry. This aim can be met, on Peirce's view, if there is some commonality between all possible inquirers that we can investigate by means of the abstractive method of cenoscopy. We also considered Peirce's arguments against basing logic in psychology or natural history. Basing philosophy in any kind of idioscopy ('idioscopism'), opens up the possibility of vicious circularity and may thereby undermine our ability to attain rational self-control.

Cenoscopy is, if the arguments just given are correct, a form of first philosophy. However, recent pragmatists have typically rejected any form of first philosophy. In this section I introduce two recent pragmatist arguments for this rejection due to Huw Price and David Macarthur respectively. I then argue that Peirce's position is not inconsistent with pragmatism or undermined by Price and Macarthur.

According to Price, philosophy should be thought of as a kind of biology or anthropology. On this view, philosophy is a kind of third-personal theorising in which we attempt to explain, in biological or anthropological terms, why we engage in certain linguistic behaviours. Price's position is pragmatist in so far as he begins with an account of human beings and their practices, rather than with, say,

fundamental physics. Price calls this kind of naturalism 'subject naturalism', and distinguishes it from 'object naturalism'. Price's position is, in the terms we have just developed, a form of idioscopism.

David Macarthur's position is closely related to Price's. However, unlike Price, he does not think that philosophy should be understood as a third-person discipline. Macarthur offers a series of arguments against Price's position that the Peircean can agree with. The Peircean splits with Macarthur over the question of whether philosophy can have a foundational role for the sciences. Moreover, Macarthur rejects the idea that philosophy should aim at providing, as cenoscopy does, an account of any possible inquirer.

Both Price and Macarthur are motivated by the attempt to produce a naturalistic philosophy. Both also take pragmatism to be committed to naturalism. I argue that neither form of naturalism is required by pragmatism. In fact, if the Peircean arguments developed in the previous section are successful, then we can adopt a kind of 'first philosophy' on pragmatist grounds.

3.1 Price's Subject Naturalism

Price introduces his form of pragmatism by presenting it as a variety of naturalism. According to Price, 'naturalism' means 'at least' that:

1. the 'concerns' of science and philosophy are not 'simply disjointed', and

2. where they 'overlap' philosophy must 'defer to science' (Price 2013, p. 3).

As stated here, Price's position starts with distinction between science and philosophy. We will see in a moment that, in fact, this distinction is collapsed. On Price's view, there is at least some commonality in the 'concerns' of science and philosophy. One way in which the concerns of science and philosophy can overlap is by sharing some object of interest. The philosopher and the psychologist might both be interested in, say, human decision making. On Price's view, the philosopher must defer to the results of the psychologist in their theorising.

Having set out this basic conception of naturalism, Price goes on to distinguish between 'object' and 'subject' naturalism. He draws this distinction according to whether we start with what the sciences say about the world in general or with what they say about us. The former orientation is familiar from various contemporary forms of physicalism, materialism, and naturalism. A popular variant of

object naturalism starts with, say, an ontology derived from modern physics and then attempts to make sense of all of our various commitments in those terms. We might wonder, for instance, whether there is room for morality in a world entirely constituted by the kind of objects studied in this privileged version of physics.[64]

'Subject naturalism', on the other hand, insists that 'philosophy needs to begin with what science tells us about ourselves' (Price 2013, p. 5). We don't start by, say, taking physics as our story about the world and building up from the objects of physics to a story about ourselves. Rather, we start with what biology and a certain kind of anthropology tell us about ourselves. The shift from object naturalism to subject naturalism is a characteristically pragmatist move. Pragmatists start with a story about us and our practices.

Price characterises the task of philosophy as the provision of a kind of 'linguistic anthropology' (Price 2011, p. 11). On this view, the philosopher provides an explanation of our use of certain philosophically interesting concepts in functional terms. This functional story can only appeal to the results of biology or anthropology, or both (e.g. Price 2011, pp. 110–111, 320). Price sketches an example of how we might explain probabilistic concepts in these terms:

> Crudely put, the view is that creatures who are decision-makers under uncertainty find it useful to tie their credences to a topic suitable for debate and consensus, and that's what the notion of probability provides. *By* discussing propositions about probability—by coordinating beliefs about *that*—speakers can coordinate their credences. That's what talk of probability is 'good for', on this view. The distinctive 'objects' of such talk—the probabilities themselves—inherit their properties from the functional task, from the credences, or dispositions to betting behaviour, to which *talk* of probability gives voice. (Price 2013, p. 47)

We understand the concept of probability, by understanding the function that it plays for creatures who have to make decisions in a condition of uncertainty. This is the condition that we find ourselves in if we adopt a conception of ourselves as a certain kind of natural creature.

It is important to note that the sketch of an explanation of our use of probabilistic concepts does not invoke a notion of representation. We do not explain our use of probabilistic concepts by saying that they 'represent' some probabilistic fact in the world. The rejection of 'representationalism' is a core feature of Price's linguistic anthropology. As Price characterises it, the representationalist assumption is the view that the function of linguistic items (words, concepts) is to 'stand for'

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[64]Price refers to these problems as 'placement problems'. They will be an important subject in Chapter Five

or 'represent' some non-linguistic object (Price 2013, p. 9). On Price's view, this assumption about language cannot be sustained once we adopt the subject naturalist orientation (Price 2013, pp. 11–15).[65]

Price's argument for the rejection of representationalism is a direct upshot of his particular form of pragmatist naturalism. When we take up the perspective of the linguistic anthropologist, we find that representationalism is a bad 'proto-theory' of the function of language (Price 2013, p. 25). Representational discourse is then judged in so far as it provides a good account of human linguistic practices from a third-person scientific perspective. The Peircean, on the other hand, can take certain kinds of representational language to name, from within, ideals for theoretical inquiry. We cannot do this if philosophy is understood as third-person linguistic anthropology.

The Peircean arguments against various forms of idioscopism are aimed at showing why we should take philosophy to be not only different from the other sciences, but also as foundational for them. These arguments include descriptive accounts of various episodes in the history of inquiry along with theoretical diagnoses of what those episodes revealed. Peirce also offers more prescriptive claims, which tell us what we should do in order to avoid the risks of circularity (anti-Sigwart) and what we should do in order to gain the right kind of vantage point from which to criticise current epistemic practices (anti-Dewey).

Peirce's arguments are excluded by Price's naturalism. However, what we have seen so far of Price's position does not constitute an argument against Peirce on these matters. Price starts from a characterisation of naturalism that already excludes Peirce's position from consideration. On the other hand, Peirce's arguments can challenge Price. Price's position relies on the health of theoretical inquiry. Consequently, if Peirce can demonstrate that Price's naturalism undermines the health of inquiry, then Price's position is in trouble. He would be in the somewhat contradictory position of implicitly relying on something while explicitly undermining it.

3.2   Macarthur's Liberal Naturalism

David Macarthur and Huw Price agree on a great deal with respect to pragmatism, metaphysics, and first philosophy. In fact, the paper which first set out the 'subject'

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[65]These arguments will be considered in more detail in subsequent chapters.

vs. 'object' naturalism division, and the resultant metaphysical quietism, was co-written by Macarthur and Price (Macarthur and Price 2007). However, there are some important differences between the two regarding the relationship between science and philosophy. Macarthur charges Price with a kind of 'scientism'. One aspect of this scientism that Macarthur focuses particular attention on is Price's endorsement of third-person theorising at the expense of the perspective of the participant in linguistic practices. However, unlike in the case of Peirce, this does not motivate any kind of first philosophy.

Against Price's subject naturalism, Macarthur defends a form of 'liberal' naturalism. This kind of naturalism refuses to equate the natural with the scientific. Instead, the liberal naturalist focuses their attention on the contrast between the 'natural' and the 'supernatural' (Macarthur 2014a, p. 74). That Price is not this kind of liberal naturalist is made clear by his shift from the claim that we must study the function of various concepts in our lives as 'natural creatures', to the claim that, within philosophy at least, we must exclusively deploy the explanatory resources of biology and/or anthropology (Macarthur 2014a, p. 76).[66] Here the natural is aligned with that which is revealed by a certain kind of science.

Macarthur argues that Price's conception of the relationship between science and philosophy makes it hard to understand how philosophy might 'defer' to science. Price seems to think that philosophy just is a kind of biology or anthropology. If so, then philosophy does not defer to science, rather it is identical with (some) science.[67]

More seriously, the authoritative role Price grants biology and anthropology pulls against his desired pluralism. Price's pluralism consists in the claim that there is no privileged language which accurately 'represents' the world. Rather, we use descriptive language for all sorts of purposes. On this view probabilistic language, or ethical language, are just as 'descriptive' as scientific language. This is a result of his particular brand on anti-representationalism, which he takes to be the upshot of deploying science in philosophy.[68] Price's claim is that, '[i]f we do science better in philosophy, we'll be less inclined to think that science is all there is to do' (Price 2013, p. 21). However,

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[66]Paul Redding makes a similar point (Redding 2010, pp. 272–273).

[67]Note that Peirce's claim that philosophy is a form of theoretical science is not susceptible to this kind of worry. For Peirce, philosophy is a science with its own subject matter.

[68]Price's anti-representational arguments will be considered in more detail in Chapter Five.

> while Price recognizes a plurality of linguistic frameworks of which the scientific is only one, the scientific framework *does* have a special kind of priority because it is from this framework that one practices philosophy! The scientific framework has *philosophical* primacy: it is the position from which one articulates one's worldview. Subject naturalism *explains* the functions of <u>all</u> linguistic frameworks and in so doing gives us a picture of the world. It, therefore, bears an asymmetrical explanatory relation to other frameworks. Whatever theoretical reflection non-scientific frameworks involve is subject to functional re-description by way of the explanations propounded by subject naturalist inquiry. The subject naturalist sits in judgment of the function of all other discourses, including their theoretical aspects. This is enough to convict Price of scientism *contre lui*. (Macarthur 2014a, pp. 80–81)

Macarthur notes, further, that the only theoretical explanations that Price countenances are causal ones. He excludes, for instance, the kind of 'rational sensitivity' to, say, moral values appealed to by liberal naturalists like McDowell. For such thinkers reasons are natural in so far as they are not supernatural (Macarthur 2014a, p. 83).

One of the pressures that Macarthur highlights in Price's form of scientism is that, by adopting a third-person orientation on linguistic practice, Price is blind to distinctions that are only available from the second-person perspective of the linguistic practitioner (Macarthur 2014b, p. 84). One such distinction is that between correct and incorrect uses of language:

> A presupposition of Price's approach that goes unnoticed is that it is has the resources to detect the *meaningful* uses of language as opposed to the meaningless. That is, if we are studying the function of sentences of the form 'x means F' we must first exclude such uses as 'Cat means number', 'Rain means green', 'Tuesday means ought' etc. And it is important to see that this requirement holds generally for all the uses of language of interest to the subject naturalist. Subject naturalism must be capable of distinguishing, as a preliminary to theorizing about linguistic functions, the appropriate data, namely, *meaningful* or *normatively appropriate uses* of language: whether these take the form of speech-acts such as assertion or the use of semantic or intentional concepts (e.g. meaning, belief). Assertions and concepts are essentially normative items the genuine cases of which can only be picked out by attending to the normative significance of candidate assertions or candidate conceptual employments. (Macarthur 2014b, p. 90)

If this is right, then our theoretical focus must then include, on top of third-person scientific information, the first-person and second-person perspectives of the participant in a linguistic community. By widening his theoretical focus to include second-person and first-person data, Macarthur allows philosophical reflection to incorporate various other sources of non-supernatural insight. This might include appeals to literature and the arts, introspection, or conceptual analysis (c.f. Macarthur 2010).

Like Macarthur, Peirce does not set up philosophy in entirely third-personal terms. In this, they both differ from Price. However, both Macarthur and Price are committed to the rejection of both metaphysics and first philosophy. Macarthur does not think that there is any prospect for telling a story about *any possible* inquirer. Nor does he think that such a project could be foundational for the sciences. Price and Macarthur this differ over what the ideals for theoretical inquiry are and, perhaps, over what they should be.

Like Price, Macarthur takes pragmatism to be a kind of naturalism. While Macarthur does not endorse Price's alignment of the natural with the natural-scientific, he does take naturalism to exclude the invocation of the supernatural. Peirce does not explicitly make any such restriction on the kinds of explanation that we might find ourselves giving in philosophy. This, however, raises the question of the relationship between pragmatism and naturalism.

3.3   Pragmatism and Naturalism

We've just seen that, although there is some dispute between Price and Macarthur, both take pragmatism to be a naturalist orientation. We've also seen that Peirce is not a naturalist if by naturalism we mean the replacement of philosophy with Price's linguistic anthropology. Nor is Peirce a naturalist if by naturalism we mean the rejection of first philosophy. Macarthur also proposes the idea that naturalism is characterised by a rejection of the 'supernatural'. But even this claim is not shared amongst either the classical pragmatists or all contemporary pragmatists. It is worth considering some examples of pragmatists adopting, for pragmatist reasons, supernatural hypotheses. We will then turn to a sense in which most pragmatists *are* naturalists. The aim of this discussion is to defuse the idea that showing something to be not 'naturalistically respectable' automatically implies that it should be unacceptable for any pragmatist.

F. C. S. Schiller is one early pragmatist who did not use 'naturalism' with positive connotations. We find him, for instance, railing against 'the naturalistic view of life' (Schiller 1903, p. 440). Moreover, he held that pragmatism is what allows us to reject naturalism because it proves that 'Nature cannot be indifferent to us and to our doings' (Schiller 1903, pp. 440–441). There is, of course, a reading of these claims that would be consistent with the views of either Price or Macarthur. However, Schiller's account of pragmatism prioritises ethics over the other sciences. According to Schiller pragmatism shows that the 'purposive character of

mental life generally must influence and pervade also our most remotely cognitive activities' (Schiller 1903, p. 437). That is, there is not thought without practically engaged thinkers who are acting in order to attain certain ends or ideals. This story, thinks Schiller, takes priority over any result of cognition, and especially of natural scientific theorising, that might try to undermine it.

In attempting to carry out this pragmatist programme, Schiller endorses phenomena that would be taken by the liberal naturalist to be 'supernatural'. Macarthur characterises the kind of entities that naturalism rejects in terms of 'immortal souls or magical powers and suchlike' (Macarthur 2014a, p. 74). However, these were exactly the kinds things that Schiller took to be worthy of experiment. He held, for instance, that belief in life after death could be justified on pragmatist, ethical, grounds (Schiller 1897). Both Schiller and William James engaged in parapsychological research (Ford 1998; Schiller 1930).

In addition, the pragmatists endorsed various forms of theism, and other religious beliefs, on pragmatist grounds. Peirce seemed to think his theism took him beyond nature in some way. For instance, when setting out his form of pragmatism in a letter to Calderoni he leaves open whether the universe is governed by a divine purpose or rather the 'virtual purposes of nature' (CP8.211, 1905). Both options, it seems, are acceptable to Peirce. William James's 'Will to Believe', is also, of course, a defence of taking on various religious beliefs on pragmatist grounds (James 1896).[69] There is thus no particular inclination amongst the early pragmatists to exclude supernatural beliefs at the outset, or to think of them as having any particular tension with pragmatism.[70]

Dewey, on the other hand, does think of his pragmatism as a kind of naturalism. In *Nature and Experience* he offers 'naturalistic empiricism' and 'empirical naturalism' as possible labels for his view (LW1:10, 1925). However, Dewey's use of the term was considered by some with more hard-nosed scientific leanings as being too vague. In order to distinguish themselves from the pragmatists, other terms like 'physicalist' or 'materialist' would be used. Wilfrid Sellars reports that his father took this attitude:

> As for Naturalism. That, too, had negative overtones at home. It was as wishy-washy and ambiguous as Pragmatism. One could believe almost anything about the world and even some things about God, and yet be a Naturalist. What was needed was a

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[69]James's form of theism is discussed in Hall 2009.

[70]Some supernatural beliefs are in tension with pragmatism, of course, but they are not in tension with it simply by virtue of being supernatural.

new, nonreductive materialism. My father could call himself a Materialist in all good conscience, for at that time he was about the only one in sight. (Sellars 1979, p. 1)

Reflecting on the attitude of Roy Wood Sellars, McKenna and Pratt distinguish between two broad streams of naturalism in American philosophy:

> As naturalism became a key way of describing (and polarizing) American academic philosophy, two strands developed: those like Sellars who began with some form of physicalism and a strong reliance on physical sciences, and those who began with the recognition of continuity. Emerging from the first strand were the logical positivists and their successors, including W. V. O. Quine, Wilfred Sellars, and Donald Davidson. Emerging from the other was a broad range of naturalists including Randall, Hook, and Justus Buchler. (McKenna and Pratt 2015, p. 101)

The 'scientific' approach here can be seen both in Price and in the object naturalists that he criticises. By emphasising the deference of philosophy to the sciences, Price can only mean by 'naturalism' something like the scientific 'strain' of naturalism. The other strain is characterised by Dewey in terms of its endorsement of the 'continuity of the lower (less complex) and the higher (more complex) activities and forms' (LW12:30, 1938; cited in McKenna and Pratt 2015, p. 100). That is, the continuity approach holds that there is no major 'rupture' between human activity and the rest of reality. This approach rejects a kind of dualism between, say, mind and world. On this view there is one kind of stuff, but it is not demanded that it only be understood in terms of the methods and results of the natural sciences.

The liberal naturalist *a la* Macarthur adopts a continuity view rather than aligning the natural with the natural-scientific. The distinction between the natural and the supernatural can also be drawn consistently with the continuity view. We could say that the 'spooky' entities listed above would represent a rupture in the continuity of the natural world. However, this 'contrastive' sense of natural is only one form of continuity naturalism. One can also be a continuity naturalist by dropping the distinction between the natural and the supernatural. This would leave us with a form of 'non contrastive' or 'absolute' naturalism. This view is defended by Hans Fink (Fink 2006). As Fink puts it: '[on the absolute] conception of nature to say that something is natural is not to say something specific about it but merely to deny claims from others that a certain domain could be in discontinuity with or be *sui generis* in relation to nature' (Fink 2006, p. 218). This sense of naturalism does not automatically exclude research into strange phenomena. It merely holds that whatever the phenomena in question are, they are in some respect continuous with the rest of nature. We will see, in later chapters, that Peirce

is a continuity naturalist of this sort.[71] Moreover, continuity naturalism does not demand that we abandon the ambition to produce first philosophy. That nature is continuous does not mean that the structure of inquiry is 'flat'. Some disciplines can be more fundamental than others.

Finally, it is worth noting how continuity naturalism, whether contrastive or non-contrastive, is motivated by pragmatism. Dewey's position provides a nice example of this. We find Dewey arguing for the continuity view by asserting that both philosophy and the sciences are 'refinements' of 'primary experience':

> [The] consideration of method may suitably begin with the contrast between gross, macroscopic, crude subject-matters in primary experience and the refined, derived objects of reflection [...] The objects of both science and philosophy obviously belong chiefly to the secondary and refined system. (LW1:15, 1925)

For Dewey, thought begins and ends in everyday, or 'primary' experience. Philosophy, art, and the natural sciences are 'refinements' of this experience. By virtue of beginning in, and returning to, the same domain, they are continuous with one another. The return of all concepts from reflection to everyday experience is characteristically pragmatist. Experience is, for Dewey, an active exchange between an organism and its environment rather than mere passive receipt. By virtue of starting from the perspective of our practical interaction with the world (experience), Dewey is led to his form of continuity naturalism.

Conclusion

In this chapter, I began with an attempt to clarify what Peirce means by 'cenoscopy' and one of its contrasts, 'idioscopy'. Cenoscopy is the observational science of the commonly available. I introduced Peirce's conception of the 'commonly available' in terms of what is available to any 'adult and sane person'. I suggested that two problems arise for this proposal: exclusionary worries and the 'armchair astronomy' objection. We then moved towards Peirce's conception of the 'scientific intelligence'. Cenoscopy is the science developed on the basis of that which is available to any possible inquirer. I argued that this latter proposal is superior and helps us to understand how philosophical claims come to claim the modal strength that

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[71]Still more exotic options are available. For instance, Peirce is picked by Robert Corrington as a pioneer of 'ecstatic naturalism', a metaphysics of nature articulated in semiotic terms and emphasising the creation of new signs (Corrington 1994, p. 19). Corrington goes on to understand this process in psychoanalytic terms, extending a notion of the unconscious to nature.

they do. In cenoscopy, we abstract from our present situation, and attempt to come to conclusions about all possible scientific intelligences.

I then moved on to a consideration of why cenoscopy is superordinate to idioscopy. Since the principle-provision relationship that is set out in the hierarchy is uni-directional, it grants both a kind of authority and foundational status to cenoscopy. On this basis, I presented cenoscopy as a kind of first philosophy. I considered a 'positive argument' for this status, in terms of the necessity for abduction in any kind of idioscopic inquiry. On this view, cenoscopy is closely associated with the role of abduction in inquiry. I then turned to 'negative arguments' against any proposal to base cenoscopy on idioscopy. These arguments included charges of both circularity and a failure of 'rational self-control'.

Finally, I introduced two alternative conceptions within contemporary pragmatism of the relationship between science and philosophy. In the case of Huw Price, science is presented as 'above' philosophy, and in the case of David Macarthur they are presented as on the same level. I suggested that, in both cases, Peirce's position is not rendered unworkable for the pragmatist. Since both Price and Macarthur set out their positions in terms of what kind of 'naturalism' they defend, I then considered some ways in which the classical pragmatists do and don't count as naturalists. Pragmatists tend to be naturalists in the sense of refusing a dualistic *contrast* between nature and the supernatural. They need not be, however, naturalists in either Price or Macarthur's senses.

In the next chapter we will consider in more detail Peirce's notion of truth as the goal of inquiry. This notion of truth can come in various 'strengths', which will allow for more or less ambitious speculations when we turn to metaphysics itself in the subsequent chapter.

Chapter 3

True Propositions and the Aim of Inquiry

Introduction

In the previous chapter I introduced Peirce's discussion of truth as the ultimate aim of theoretical inquiry, and as the proximate aim of practical inquiry. This discussion did not directly say anything about the truth of this or that particular proposition. In order to both connect Peirce's account of truth with that of recent pragmatists in the analytic tradition and to set the stage for our transition to Peirce's metaphysics, it will be necessary to turn to Peirce's account of the truth of propositions. In this task, we will be aided by recent work on Peirce's semeiotic account of the proposition.

The basic move that connects truth, understood as the aim of inquiry, and truth, understood as a feature of certain propositions, is taking true propositions to be an output of successful inquiry. Much more detail is required to flesh this simple idea out and to ensure that it does not end up as a tautology.[1] In this chapter I offer two related options for fleshing out this idea from Peirce. The first option takes Peirce to offer a merely 'contextualist' story about truth. On this view we take propositions to be true or false as answers to particular questions, asked within particular forms of inquiry. I derive this story largely from Cheryl Misak and Christopher Hookway's respective work on Peirce. The second option is offered *in addition* to the contextualist story. It adds a notion of the 'absolute truth' as an

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[1]That is, we'll need to say something about successful inquiry that doesn't depend on already understanding what a true proposition is.

ideal limit for the project of inquiry in general. I argue that the addition of the absolute notion of truth does not clash with the contextualist account of truth. I will argue that, on Peirce's view, only one proposition is absolutely true. To judge of a particular, finite, proposition, uttered in a context, that it is true does not commit you to the view that it is *absolutely* true.

Peirce is notorious for understanding the truth of propositions in terms of their being accepted at the 'end of inquiry'. I will begin this chapter by introducing and attempting to sidestep some classic objections to Peirce's end of inquiry derived from Bertrand Russell and, more recently, Crispin Wright (§1). This will motivate the accounts of Peirce on truth offered by Hookway and Misak. Both accounts understand Peirce to be offering a 'pragmatic elucidation' of the meaning of the concept truth for our practices, rather than offering necessary and sufficient conditions for the truth of a proposition (§2). Moreover, both offer a kind of contextualist approach, according to which the truth of a proposition is understood in terms of satisfying various theoretical virtues which can be local to a given form of inquiry.

I then suggest room for a notion of absolute truth by turning to Peirce's entry on truth in *Baldwin's Dictionary* (§3). This turns on the interpretation of Peirce's claim that the truth of a proposition 'that we might utter' essentially depends 'upon that proposition's not professing to be exactly true' (CP5.565, 1902). I will claim, then, that any proposition which is true in the contextualist sense, 'presents itself' as not being 'exactly true'. In order to make sense of this it will be necessary to draw on recent work on Peirce's semeiotic account of the proposition developed by Frederick Stjernfelt, Francesco Bellucci, and Richard Atkins (§4). This is done by showing how the proposition iconically displays its own dependence on experience and on 'prescissive abstraction'. The absolute truth is an ideal proposition which does not have these dependencies (§5).

I conclude by briefly comparing the Peircean accounts on offer with contemporary pragmatist views which refuse the strong link between truth and inquiry that Peirce insists on (§6). I challenge Price's attempt to develop a normative account of truth without any idealised conception of inquiry. I draw out how the methodological differences set out in previous chapters result in the differences between Peirce and Price.

1 The Truth-Inquiry Link

1.1 The Predestinate Opinion

In some places, Peirce claims that truth is to be understood in terms of the 'end of inquiry'. A key source for this claim is found in 'How to Make our Ideas Clear':

> all the followers of science are fully persuaded that the processes of investigation, if only pushed far enough, will give one certain solution to every question to which they can be applied.[2] [...][3] Different minds may set out with the most antagonistic views, but the progress of investigation carries them by a force outside of themselves to one and the same conclusion. This activity of thought by which we are carried, not where we wish, but to a foreordained goal, is like the operation of destiny. No modification of the point of view taken, no selection of other facts for study, no natural bent of mind even, can enable a man to escape the predestinate opinion. This great law is embodied in the conception of truth and reality. *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.' (W3:273/EP1:138–139, 1878, emphasis mine)

In this passage the 'end' of inquiry appears as the opinion which is 'predestinate', 'foreordained', or 'fated to be ultimately agreed to'. Peirce seems to be presenting the view that there is some opinion that sits at the end of inquiry which can be identified with the truth.[4]

The word 'end' is equivocal. We have already seen that Peirce thinks of truth as the aim of inquiry. This is one meaning of 'end'. But the above passage also suggests the 'end' in the sense of the termination of a process.[5] This has led to objections of the sort most famously entertained by Bertrand Russell, which attempt to show that the propositions endorsed at the termination of the process of inquiry are arbitrary (or worse). Russell considers, and eventually rejects, an interpretation of Peirce according to which whatever is believed by the last human being is true. On this view truth would be made to

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[2]The editors of *Essential Peirce* note that Peirce later edited this sentence to change 'fully persuaded' to 'animated by the cheerful hope that', and 'every question to which they can be applied' to 'each question to which they apply it' (see R422, 1893; EP1:378).

[3]Peirce offers a long example of convergence here. It will be presented and discussed later in this chapter (§2).

[4]This passage also displays the close connection between the notions of 'truth' and 'reality' in Peirce. We will return to Peirce's conception of reality ascriptions in the next chapter.

[5]These meanings are related. Many processes terminate when they successfully achieve their aim. If I'm looking for lunch, I'll stop looking once I've found it. However, the meanings come apart since it is possible for a process to terminate unsuccessfully. I might stop looking for lunch because I've run out of time and need to get to work. In this case the looking-for-lunch process has ended, but it has not achieved its end (c.f. Legg 2014a, p. 206).

> depend upon the opinions of the last man left alive as the earth becomes too cold to support life. As he will presumably be entirely occupied in keeping warm and getting nourishment, it is doubtful whether his opinions will be any wiser than ours. (Russell 1951, p. 145; cited in Legg 2014a, p. 206).[6]

The 'last man' that Russell imagines is unlikely to have the time for dispassionate contemplation. Consequently, it would likely be *worse* than arbitrary for us to match our beliefs to those of the last person on earth. That is, picking any other human at random would likely leave us in a better position.

However, this is not either the most obvious reading, or a particularly charitable reading, of the passage from Peirce just cited.[7] To see this, it is important to take seriously the references to 'destiny' and 'fate' that Peirce makes in the passage. As Hookway notes, '[h]owever "fate" is explained, it is clear that [Peirce] wanted to hold that we come to agree on some proposition because it is true; it is not true simply in virtue of the fact that we come to agree on it' (Hookway 2000b, p. 47).[8] Whatever this notion of fate is, it does not require that the settlement of opinion actually happens or that there is any supernatural intervention in the world. In fact, it is compatible with various caveats about inquiry continuing appropriately (i.e. the claim can be conditional: *if* inquiry continues, *then* it will settle on certain results).[9] We do not then need to think, as Russell does, that Peirce's reference

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[6]Legg suggests that Russell endorsed this as an objection to Peirce. However, Russell deploys the example to undermine what he takes to be a tempting, but obviously false, interpretation (Russell 1951, p. 145).

[7]It is worth noting that Russell is responding, via a quotation from Dewey, to the emphasised portion of the passage given above from 'How to Make our Ideas Clear' (along with a passage from *Baldwin's Dictionary* that we will consider later, and which introduces the 'limit metaphor') (c.f. Russell 1951, p. 144).

[8]An immediate objection arises to this idea: How can we get a purchase on the notion of truth by looking to inquiry, if we explain the development of rightly-ordered inquiry in terms of some prior notion of truth. I will return to this problem in a moment.

[9]The full story of Peirce's attitude to whether the end of inquiry *will* happen is quite complex. Peirce does suggest, at the time that he wrote 'How to Make our Ideas Clear', that the fated settlement *will* happen. However, even at this point he does not think that it will necessarily be human beings that do the settling. He seems to think that there is, as a feature of the evolution of the universe, a tendency to produce inquirers. This thought is expressed in 'How to Make our Ideas Clear' as follows:

> Our perversity and that of others may indefinitely postpone the settlement of opinion; it might even 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. (W3:274/EP1:139, 1878)

If the universe, and inquiry into it, are allowed to continue, then the chance of a given question getting settled approaches certainty. But we need not follow Peirce in this, and Peirce himself seems to have changed from a 'will' reading of the end of inquiry to a 'would' reading (c.f. CP1.560,

to 'fated' results is 'merely rhetorical' or 'not intended seriously' (Russell 1951, p. 145).

However, even with this clarification a few problems arise. For instance, we might inquire into whether Bertrand Russell lit an even or odd number of tobacco pipes in his life. This seems like a perfectly meaningful, if uninteresting, question and it seems that there should be a fact of the matter about it. However, while there are surely some things still to be discovered about Russell's smoking habits, it is doubtful that inquiry will ever be able to converge on an answer to this particular question. This is the problem of 'buried secrets': truths which are not accessible by inquiry. Peirce's explicit response to the problem of buried secrets is a brave one, but one which most of his readers have been reluctant to follow. Peirce holds that we must not assume that *any* fact is forever inaccessible to inquiry. Peirce offers an example of the failure of attempts to set up certain questions as forever outside the scope of inquiry:

> The history of science affords illustrations enough of the folly of saying that this, that, or the other can never be found out. Auguste Comte said that it was clearly impossible for man ever to learn anything of the chemical constitution of the fixed stars, but before his book had reached its readers the discovery which he announced as impossible had been made. (CP6.556, 1887)

Peirce's attitude may be acceptable for claims at the cutting edge of scientific inquiry, or for claims that might do important explanatory work for us, but it is a less obviously satisfactory answer to the question of whether the number of pipes lit by Russell was even or odd. Some contemporary Peirceans have embraced versions of this response,[10] while others have deflected the problem by means of an appeal to

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1905). On the other hand, Almeder has argued that Peirce continued to believe that inquiry *will* be fixed for any question (Almeder 1985, p. 88). However, as Almeder acknowledges, Peirce does draw a distinction between the kind of 'will be' associated with the claim that inquiry *will* converge on a fated result, and the 'would be' modality. Further, he holds that this would-be modality is all that is needed to get Peirce's characterisation of truth off the ground (Almeder 1985, pp. 88–89).

[10]Some, like Legg, have put their emphasis on the notion of hope. On this view we might adopt the *hope* that any question we might inquire into has an answer (e.g. Legg 2014a). Others have defended Peirce by restricting the notion of 'fact' (e.g. Atkins 2016).

the 'will be'/'would be' distinction.[11] We will consider buried secrets further, when more detail about the Peircean proposals on offer have been put forward.[12]

Russell offers us an additional worry about Peirce's account of truth:

> why does Peirce think that there is an 'ideal limit towards which endless investigation would tend to bring scientific belief?' Is this an empirical generalization from the history of research? Or is it an optimistic belief in the perfectibility of man? Does it contain any element of prophecy, or is it a merely hypothetical statement of what would happen if men of science grew continually cleverer? Whatever interpretation we adopt, we seem committed to some very rash assertion. *I do not see how we can guess either what will be believed, or what would be believed by men much cleverer than we are.* Whether the theory of relativity will be believed twenty years hence depends mainly upon whether Germany wins the next war. Whether it would be believed by people cleverer than we are we cannot tell without being cleverer than we are. (Russell 1951, pp. 145-6, emphasis mine)

The core point that Russell makes here does not turn directly on the motivation for Peirce's claims about the 'ideal limit', but rather on its value as part of an account of truth.[13] Russell notes that we can neither foresee what will be, or guess what would be, believed by either future investigators or investigators more well informed and clever than we are. If an account of truth is supposed to inform someone unfamiliar with the concept how to apply it, then we may be in trouble here. It doesn't help someone to say that the property truth can be ascribed to a proposition if and only if some condition totally opaque to them applies.[14] We want, instead, some condition that we have access to now. But, *pace* Russell, this kind

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[11]For instance, Misak argues that in the case of 'buried secrets' it is simply not possible for us to inquire 'sufficiently far', so the conditional claim about what we *would* discover were we to inquiry sufficiently far can still come out as true (e.g. Misak 1991, pp. 138–139). For instance, if it is true that Russell lit an odd number of pipes, then were there sufficient evidence available we would settle on the belief that Russell lit an odd numbers of pipes. As it happens, however, we cannot inquiry sufficiently far into this question because the evidence is not available.

[12]We will also consider Russell's own example, in which future scientists investigate whether Russell had eggs and bacon for breakfast on the day in which he wrote his response to Dewey. Russell's example is meant to emphasise the difference in authority of our own judgements about such autobiographical details as opposed to the authority of some hypothetical future scientist. Even if such future scientists could make some headway with the question of Russell's breakfast, and were motivated to do so, it seems that their answer would be far less reliable than Russell's own. This example highlights the fact that we seem to have more authority over some of our first-person beliefs that any future inquirer might be expected to have.

[13]The issue of Peirce's motivations will be important for us later, however. We will see that Russell is right that there is something like an 'optimistic belief in the perfectibility of man' here in the form of various regulative hopes for inquiry.

[14]The kind of arbitrariness worry that we have seen from Russell earlier also comes up in his reference to the truth or falsity of the theory of relativity being decided by the Second World War (the first edition of the book Russell's article appears in was published in 1939).

of prophetic ability is not needed to get Peirce's account of truth off the ground.[15]
Unlike Russell, Peirce is not attempting to offer an analytic definition of the term
'truth'. A similar response also applies to a more recent objection from Crispin
Wright.

Crispin Wright offers an objection closely related to Russell's.[16] According to
Wright's proposal, we should understand the Peircean theory to associate truth
with what would be endorsed in a state of complete information (Wright 2001,
pp. 763–764). That is, the true beliefs are the ones that we would endorse once *all*
the data is in. This might avoid Russell's worries about his breakfast. Surely if we
have *all* the data then we can determine what Russell had for breakfast the day
he decided to set down his worries about Peirce's account of truth. Perhaps we can
even determine, on the basis of complete data, whether Russell smoked an even
or an odd number of pipes. Wright imagines the completeness of the final state of
information to consist in its providing a truth value for any proposition (Wright
2001, p. 763). We can, with Wright, have serious misgivings about the coherence
of this notion of 'complete information'. For one thing, contemporary science has
made the claim that there might be a single, unique, sum total of information
hard to endorse (c.f. Wright 2001, pp. 763–764). The point is that *if we were* in
such a state, then all propositions would be decidable. This would still be true
even if the state is physically impossible (due to, e.g., quantum indeterminacy or
deterministic but chaotic systems).

Russell directs our attention to the difficulty of knowing, from our current po-
sition of incomplete information, what *would* be judged in a state of complete in-
formation. However, Wright's worry is more fundamental than this. He notes that
it would be impossible for anyone to know that they were themselves in a state

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[15]It can be argued that the project is not quite as hopeless as Russell lets on. We can see an indic-
ation of what it would look like in Johanna Seibt's developments of a Sellarsian process ontology.
Seibt develops Sellars's gestures in the direction of what she calls 'projective metaphysics', which
by reflecting on present problems or tensions between the scientific and manifest image imagines,
by analogical reasoning, what kind entity would have to be endorsed in a future scientific world pic-
ture (Seibt 2000). More specifically, the Sellarsian argument directs our attention to the problem of
incorporating the experience of colour, which is essentially continuous, into a world picture made
up of discrete units of one sort or another. The Sellarsian approach argues that the only kind of
object which could bridge this gap would be something analogous to our notion of a 'process' (Seibt
1990, pp. 233–270). A similar pattern can be seen in Peirce's abductive metaphysics, as developed
in the next chapter. However, this does not mean that such activity is necessary for deploying the
concept of truth, as Russell here argues.

[16]This discussion is indebted to Misak's pioneering work on the relationship between Peircean
truth and Wright's superassertabililty theory (e.g. Misak 2007).

of complete information. As Misak puts it, '[w]e might in fact believe all sorts of truths, but we cannot know when we are in such a position, precisely because we cannot know when we have a belief which would forever satisfy our aims' (Misak 2007, p. 83). But if we are unable to ever know that we are in the 'ideal' position, then what we would judge in such a position would not include the truth that we were in the position. This leads to a problem:

> For the idea that what is true is what a subject meeting certain conditions, C, would be in a position to acknowledge directly requires that a subject who was actually in conditions C—a subject of whom it was *true* that she was in conditions C—would be in a position to acknowledge the fact. If such an acknowledgement would be impossible, then the antecedents of the subjunctive conditionals which, on a Peircean view, explicate what it is for a thought to be true, are uniformly false on purely conceptual grounds. Since the status of subjunctive conditionals with conceptually impossible antecedents is, by and large, extremely moot, that is bad news for Peircean views of truth. (Wright 1992, p. 46)

The subjunctives that Wright has in mind here are all of the following form, where *p* is any true proposition:

> If a subject were in conditions C ['the end of inquiry'], then they would be in a position to acknowledge *p*.

Wight's claim is that thoughts about what would be the case in a conceptually impossible state can tell us nothing about what truth is. Someone looking for conceptual clarity about 'truth' is not helped by being given a series of entirely uninformative conditionals.

1.2 Definitions and Pragmatic Elucidations

Both Wright's claim that the Peircean 'end of inquiry' is conceptually impossible, and Russell's claim that adequate judgements about what will be believed by future inquirers, or would be believed by cleverer inquirers, gain purchase by virtue of a similar misunderstanding of Peirce. Both take Peirce to be offering an 'analytic definition' of truth (c.f. Atkin 2015, pp. 92–93). When Russell challenges Peirce's account of truth, he is looking for a set of necessary and sufficient conditions for the application of the concept. Since this definition is supposed to be informative to one who is not already familiar with the concept, we want to avoid using it in the definition. That is, we don't want our definition to be circular. In such a project it would not be worthwhile to appeal to the beliefs that will be (or would be) held by future enquirers. Someone who wants to know when to apply the predicate 'true'

to a proposition is not helped by being told only to apply it when future inquirers will believe the proposition in question.

Wright, while he thinks of Peirce as offering a traditional analytic definition, does not himself aim at providing one. Instead of an exhaustive list of necessary and sufficient conditions, Wright hopes for an 'analytical theory' in a broader sense (Wright 2001, p. 760). Such a theory attempts to assemble

> a body of conceptual truths that, without providing any reductive account, nevertheless collectively constrain and locate the target concept and sufficiently characterize some of its relations with other concepts and its role and purposes. (Wright 2001, p. 759)

Wright goes on to describe the method as follows:

> The method here should be initially to compile a list, including anything that chimes with ordinary a priori thinking about truth—what I shall call a *platitude*—and later to scrutinize more rigorously for deductive articulation and for whether candidates do indeed have the right kind of conceptual plausibility. (Wright 2001, p. 760)

If Peirce's theory is taken to be 'analytical', even in this broad sense, we can still run in to the problems set out above. Peirce's 'end of inquiry', if cashed out in terms of 'complete information', is not the kind of thing that is apt for *a priori* conceptual grasping.[17] In the next section we will see Misak arguing that Peirce's account of truth can be interpreted as a very similar view to Wright's. In order to do this, Misak's interpretation abandons the notion of complete information.

If we look at the strategy outlined in 'How to Make our Ideas Clear', we see that Peirce sets out his account of truth as aiming at the 'third grade' of clarity. He takes the third grade of clarity to come after, first, 'familiarity with a notion' and, second, 'the defining of' the notion (W3:260/EP1:126, 1878). The 'grades of clarity' are compactly stated in a later text:

> Now there are three grades of clearness in our apprehensions of the meanings of words. The first consists in the connexion of the word with familiar experience. In that sense, we all have a clear idea of what reality is and what force is—even those who talk so glibly of mental force being correlated with the physical forces. The second grade consists in the abstract definition, depending upon an analysis of just what it is that makes the word applicable. [...][18] The third grade of clearness consists in such a representation of the idea that fruitful reasoning can be made to turn upon it, and that it can be applied to the resolution of difficult practical problems. (CP3.457, 1897)

Any characteristically 'pragmatist' clarity about a concept like truth is to be found at the third grade of clarity rather than at the level of necessary and sufficient

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[17]In fact, the arguments just given suggest that the very notion is incoherent.

[18]Peirce here offers a long example of a defective definition of the physical concept of 'energy'.

conditions. Such a pragmatic elucidation is to be found by means of the previously-quoted, 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. (W3:266/EP1:132, 1878)

It is this kind of clarity that we hope for from a pragmatist account of truth, rather than that which comes from mere definition. If, then, we are to ask what Peirce thinks the definition of 'truth' is, we will find a remarkably conventional answer: 'truth is the correspondence of a representation with its object' (EP2:379–380, 1906). Peirce, moreover, thinks that this is not a particularly informative characterisation. To understand truth we need much more than this.[19] So, it seems that Russell's (and maybe Wright's) criticism depends on taking Peirce to be offering the kind of thing which he is explicitly not offering: an analytic definition of 'truth'.[20]

The above shows that Peirce at least agrees with Wright that providing necessary and sufficient conditions for truth is not the most important philosophical task. They diverge over what should be offered instead. One difference is that Peirce's approach has a historical dimension. This is a result of the fact that the articulation of the role of some concept 'for practical purposes' depends a great deal on what our 'practical purposes' are. These practices change over time. Peirce thinks that, as the practice of inquiry has developed, the notion of truth has also developed. We saw some of this in the previous chapter when discussing the extent to which we can think of the sincere Ptolemaic astronomer as a scientist. But Peirce is even more explicit about it when reflecting on 'The Fixation of Belief' some time around 1906:

> My paper of November 1877, setting out from the proposition that the agitation of a question ceases when satisfaction is attained with the settlement of belief, and then only, goes on to consider how the conception of truth gradually develops from that principle under the action of experience; beginning with willful belief, or self-mendacity, the most degraded of all intellectual conditions; thence rising to the imposition of beliefs by the authority of organized society; then to the idea of a settlement of opinion

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[19]Strictly speaking Peirce calls the correspondence notion a 'nominal' definition of truth. A nominal definition is, for Peirce, a characterisation of a concept which is merely convenient. A 'real' definition, on the other hand, 'consist[s] of two members, of which the first should declare that any object to which the definitum, or defined term, should be applicable would possess the characters involved in the definition; while the second should declare that to any object which should possess those characters the definitum would be applicable' (NM4:285, 1904).

[20]This is not to say that Peirce thought that the provision of a definition of truth was unimportant, or that better definitions might be out there (Heney 2015, pp. 505–506).

> as the result of a fermentation of ideas; and finally reaching the idea of truth as over-whelmingly forced upon the mind in experience as the effect of an independent reality. (CP5.564, c. 1906)

The concept of truth develops, or perhaps better, 'evolves', in the context of a given social environment.[21]

An 'analytic' approach can be characterised by taking apart something already given. Wright's 'platitudes' are supposed to be available *a priori* to pretty much anyone who can use the concept truth. On the other hand, a 'synthetic' approach would attempt to construct something with given materials. If the distinction is between analytic and synthetic approaches, then it seems that Peirce's is one of the latter. This thought gels well with recent work by Giovanni Maddalena. Maddalena posits an interest in synthetic reasoning as an under-appreciated, and indeed central, feature of classical pragmatist thought. Maddalena characterises a synthetic judgement, or piece of reasoning, as one which 'recognises identity through changes', whereas an analytic judgement, or piece of reasoning, 'loses identity through changes' (Maddalena 2015, p. 43). He, additionally, aligns the pragmatic maxim with this kind of synthetic reasoning (Maddalena 2015, pp. 81–83). Maddalena makes out this point by means of his own account of 'gesture', but we already have enough to see something of why the alignment is apt without his theoretical machinery.

For Peirce, we can trace the development of an idea like truth over time as it has responded to, in part, changes in the environment in which it functions. That is, we maintain the identity of the concept of truth across changes in social environment. This is not true of the strictly analytic conceptual investigations encouraged in their various ways by Wright and Russell. On the synthetic model we can understand Peirce to be, in some places, *proposing* new conceptions of truth rather than merely regimenting the 'platitudes' which any user of the concept must accept.

All of the views on offer for the rest of this chapter attempt to provide philosophical clarity about truth of a 'third grade' or pragmatist sort. That is, they *at least* attempt to avoid merely offering a definition or a set of necessary and sufficient

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[21]Short argues that the deflationism, a close sibling of Wright's own account of truth, should be thought of as right about the conceptual meaning or definition of truth, while Peirce's discussion of convergence are reflections on a particular social practice, scientific inquiry. In fact, we can think of some aspects of Peirce's account of truth as a *recommendation* of how we ought to think about truth given a commitment to scientific inquiry (Short 2007, pp. 332–333). It is worth emphasising that this proposal is being made from within the practice, rather than from the third-person perspective that we have saw Price adopt in the previous chapter.

conditions for the truth of some proposition. Instead, we look for clarity about the concept truth by seeing how it plays out in relation to the practices of theoretical and practical inquiry.

2 The Contextualist Account of Truth

2.1 Misak and Hookway: Convergence on the Indefeasible

Both Hookway and Misak take Peirce to be offering a pragmatic elucidation of truth.[22] According to Hookway a pragmatic elucidation of a concept 'provides an account of just what commitments I incur when I believe or assert a proposition in which the concept is ascribed to something' (Hookway 2000b, p. 60). This is not the same as providing a general definition of a concept which is to apply when the concept is not playing a role in some belief or assertion (Hookway 2000b, pp. 60–61). Hookway focuses his attention on commitments that we incur within some discursive practice (typically some form of inquiry). Rather than looking for necessary and sufficient conditions for the application of the concept, we look to its function in the practices in which it is deployed.

Misak, on the other hand, characterises a pragmatic elucidation of a concept as drawing our attention to the expectations that we would take on in any situation in which we applied the concept (Misak 2000, p. 59). She adds, further, that this is a much more worthwhile task for the philosopher than providing necessary and sufficient conditions. This is especially true of those concepts which are already quite familiar and in everyday currency.[23] Despite this small variation in their understanding of a pragmatic elucidation, Hookway and Misak end up with very similar interpretations of Peirce's account of truth.

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[22]The earliest use of the phrase 'pragmatic elucidation' I can find comes from Misak's *Truth and the End of Inquiry* (Misak 1991, p. 4).

[23]Misak attributes this thought to David Wiggins (Misak 2007, pp. 68–69). Wiggins argues that truth, like many terms of philosophical interest, is 'indefinable'. For Wiggins, the attempt to generate 'non-circular necessary and sufficient conditions' for the application of terms that are 'already fundamental to human thought and long since possessed of an autonomous interest' is 'highly problematic' (Wiggins 2002, p. 316). I am sceptical that this thought can be neatly attributed to Peirce. We've just seen that a certain amount of familiarity with the use of a concept (the first grade of clarity) is necessary before a definition (the second grade of clarity) can be attempted can even be approached. Not only does familiarly not indicate that a definition is not able to be provided, it is presupposed by the attempt to produce a definition. Peirce's position is not that truth is undefinable, it's that the philosophically interesting things to say about truth come by considering its role in the practice of inquiry.

Hookway has developed a Peircean account of truth over a series of papers.[24] The best way in for our purposes is to focus on 'convergence'. In the long passage from 'How to Make our Ideas Clear' cited above, we saw Peirce referring to inquiry as a process which converges on fated results. On this view, no matter what perspective the inquirer starts from, they will be drawn to the same end point as inquirers who start from very different places. Peirce offers a nice illustrative example of what he has in mind in an earlier text:

> All human thought and opinion contains an arbitrary, accidental element, dependent on the limitations in circumstances, power, and bent of the individual; an element of error, in short. But human opinion universally tends in the long run to a definite form, which is the truth. Let any human being have enough information and exert enough thought upon any question, and the result will be that he will arrive at a certain definite conclusion, which is the same that any other mind will reach under sufficiently favourable circumstances. Suppose two men, one deaf, the other blind. One hears a man declare he means to kill another, hears the report of the pistol, and hears the victim cry; the other sees the murder done. Their sensations are affected in the highest degree with their individual peculiarities. The first information that their sensations will give them, their first inferences, will be more nearly alike, but still different; the one having, for example, the idea of a man shouting, the other of a man with a threatening aspect; but their final conclusions, the thought the remotest from sense, will be identical and free from the one-sidedness of their idiosyncrasies. (W2:468–469/EP1:89, 1871)

According to Peirce, the starting point of inquiry is the most 'arbitrary' and 'individual' feature of the process. Inquiry, when functioning well, tends towards the development of beliefs that are not arbitrary or individual. We are not to look for truth (or reality) at the starting point of inquiry. We find it, instead, at the end.

Peirce also offers an example from the history of science:[25]

> One man may investigate the velocity of light by studying the transits of Venus and the aberration of the stars; another by the oppositions of Mars and the eclipses of Jupiter's satellites; a third by the method of Fizeau; a fourth by that of Foucault; a fifth by the motions of the curves of Lissajous; a sixth, a seventh, and eighth, and a ninth, may follow the different methods of comparing the measures of statical and dynamical electricity. They may at first obtain different results, but as each perfects his method and his processes, the results will move steadily together toward a destined centre. So with all scientific research. (W3:273/EP1:138, 1878)

In both examples, we see convergence in beliefs despite the inquirers in question starting from very different positions. So, we can think of the 'end of inquiry' as

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[24]These include 'Truth and the Convergence of Opinion', 'Truth and Correspondence', 'Truth and Reference: Peirce versus Royce' in Hookway 2000b; and 'Truth, Reality, and Convergence' in Hookway 2012d.

[25]This example was hidden by an ellipsis in the passage from 'How to Make our Ideas Clear' quoted during the discussion of Russell.

the point at which our answers to a given question converge. Note that in both examples a specific question is being asked: 'what is the velocity of light?' or 'what just happened!?' in response to given (although distinct) sensations.

Some forms of convergence in belief are not what Peirce has in mind. Examples of bad convergence are easy to find. In some cases, for instance, inquirers might converge on a result because they've all been paid off by some wealthy inquiry-distorter. Worries about this kind of distortion in the sciences are not hard to come by. Recently, for instance, complaints have been made about the Coca-Cola Company funding researchers who are sceptical that there is any link between diet and obesity (O'Connor 2016). Other inquirers might converge on results under the threat of physical violence. Instances of, say, forced religious conversion may provide examples of this. But these are not the kind of convergence that Peirce has in mind. Mere agreement is not what we are after. Rather, we are after agreement as the result of 'properly conducted' inquiry.[26] Misak draws attention to this by noting that the pragmatist need not defend a kind of 'contractarian' view according to which agreement in our beliefs is more important than the quality of those beliefs (Misak 2000, p. 50).

Hookway characterises Peirce's connection between truth and convergence as follows: '[i]f it is true that *p*, then anyone who inquired into the question whether *p* long enough and well enough (using good methods of inquiry) would eventually reach a stable belief that *p* which would not be disturbed by further evidence or investigation' (Hookway 2000b, p. 49). With respect to any particular inquiry that we are engaged in, we are to adopt the 'regulative hope' that such convergence is possible (Hookway 2000b, p. 61).[27]

Hookway's story is close to, but does not quite match, the passages from Peirce we have just considered. Peirce's examples do fix a certain question, but inquiry is not presented as starting from questions of the form 'is *p* true?' and concluding with either 'yes' or 'no'. The proposition *p*, to which inquiry into a given question converges, may include concepts far beyond those possessed by whoever asks the

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[26]Of course, 'properly conducted inquiry' will be a hard notion to specify. In Chapter Two, we saw something of Peirce's positive account of well-functioning inquiry. If someone has adopted the 'spirit of science', and has truth as their ultimate aim, then they will be unlikely to have their inquiry distorted in the ways just mentioned. Peirce also offers a negative characterisation of properly functioning inquiry. This comes, for instance, in his criticism of the methods of tenacity, authority, and *a priori* reasoning in 'The Fixation of Belief' (EP1:109–123). It is also present in his criticism of the influence of narrowly instrumental demands on the pure sciences (e.g. CP1:45, c. 1896).

[27]Hookway credits Misak with this insight (c.f. Misak 1991, p. 140).

question to which it is the eventual answer. That is, we may start by asking a question using certain concepts, and in the course of investigation find that, in fact, different concepts are required to capture the phenomenon under investigation. However, in practice these kind of cases should be easy to incorporate into Hookway's account.[28]

Misak nicely summarises her approach to Peirce on truth as follows:

> C. S. Peirce, the founder of pragmatism, argued that a belief is true if it would be 'indefeasible', or would not be improved upon, or would never lead to disappointment, no matter how far we were to pursue our inquiries. Although he occasionally articulated this view of truth in terms of a belief's being fated to be believed at the end of inquiry, on the whole he tried to stay away from unhelpful ideas such as the final end of inquiry, perfect evidence, and the like. (Misak 2007, p. 68)

The core texts which Misak appeals to are ones in which Peirce emphasises first, the relativisation of his account of truth to particular questions and, second, the idea of indefeasibility. These passages, as Misak suggests, tend to avoid ideas like 'fate' or the use of the metaphor of a 'limit' to inquiry. In so far as the idea of 'convergence' is useful for Misak, it is convergence as it appears in Hookway's account: a process by which we hit on the same indefeasible result as other inquirers.

Misak further clarifies the notion of 'best' involved in the idea of indefeasibility:

> The core of the pragmatist conception of truth is that a true belief would be the best belief, were we to inquire as far as we could on the matter. We shall see that 'best' here amounts to 'best fits with all experience and argument', not the kind of 'best' that other pragmatists, James and Rorty, for instance, have flirted with—consoling, best for our lives, or most comfortable. A true belief, rather, is a belief that could not be improved upon, a belief that would forever meet the challenges of reasons, argument, and evidence. (Misak 2000, p. 49)

Here Misak emphasises the fact that some ways of evaluating beliefs are irrelevant to whether they are defeasible or not. Convergence on a belief on the basis that it consoles us all will not count as appropriate convergence. Misak distinguishes this Peircean position from those of Rorty and James.[29]

As just mentioned, Misak attaches her interpretation to a few key passages from Peirce. The idea of indefeasibility is prominent in Peirce's reflections on 'How to Make our Ideas Clear' at the end of his 1908 article 'Neglected Argument for the

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[28]We might, for instance, incorporate Maddalena's pragmatist account of synthetic judgements here. In this case we are judging questions as in some sense 'the same' across changes as an investigation develops.

[29]That James thinks of the 'best' in the way of belief in this fashion has been challenged in the recent literature (e.g. Levine 2013). However, whether or not James endorsed this conception of the satisfactory belief, it persists in the popular philosophical imagination of pragmatism.

Reality of God'. There Peirce holds that 'if Truth consists in satisfaction, it cannot be any actual satisfaction, but must be the satisfaction which *would* ultimately be found if the inquiry were pushed to its ultimate and indefeasible issue' (EP2:450, 1907). Misak also points to a passage from Peirce's entry on truth in *Baldwin's Dictionary*, which holds that:

> When we speak of truth and falsity, we refer to the possibility of the proposition being refuted; and this refutation (roughly speaking) takes place in but one way. Namely, an interpretant of the proposition would, if believed, produce the expectation of a certain description of percept on a certain occasion. The occasion arrives: the percept forced upon us is different. (CP5.569, 1902)

Here, we get an idea of what it is for something to fail to be indefeasible. A belief fails if there is some situation in which we expect one thing on the basis of a proposition, but another occurs. A belief is indefeasible if there is no possible situation of that sort. Elsewhere, we get a similar claim in the language of 'rules'. Peirce holds that 'the success for which we hope [in inquiry] is that we shall attain some rule which further experience will not force us to repeal' (NM4:xii–xiii, 1901). Once we have some 'rule', or 'belief', that further experience will not 'force us to repeal', then there is nothing more to be asked of inquiry. The aim of inquiry, truth, has been attained.

We can now see why neither Misak nor Hookway require a notion of complete information of the sort that Wright criticises. To reach an indefeasible belief in some proposition in the context of a given form of inquiry does not require us to be able to provide a truth-value for *every* proposition. Moreover, the believer need not know that they have an indefeasible belief for this to work. For the believer, there is no guarantee that future experience won't overturn the belief in question.[30] This does not prevent it from being the case that *if* a belief is true, then it will be indefeasible in the sense articulated by Misak and Hookway. Misak argues that, in fact, Wright's own position is remarkably close to Peirce's. Wright holds that a proposition that is true is 'superassertible':

> A statement is superassertible [...] if and only if it is, or can be, warranted and some warrant for it would survive arbitrarily close scrutiny of its pedigree and arbitrarily extensive increments to or other forms of improvement of our information. (Wright 1992, p. 48; cited in Misak 2007, p. 81)

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[30]This is one of the central planks of Peirce's fallibilism.

2.2   Convergence in a Context

Both Hookway and Misak offer us 'contextualist' approaches to Peirce's account of truth. On Misak's image there is a general story about truth that draws our attention to indefeasibility. Indefeasibility, however, depends on different local norms in different situations. Misak draws this dimension out as part of a comparison between her version of Peirce and the deflationist about truth:

> The deflationist holds (with Peirce) that what there is to say about truth is what there is to say about local inquiries, and (against Peirce) that it follows that we do not aim at truth or that there are no general features which true beliefs have in common.
>
> [...] If the naturalist follows Peirce in seeing truth as indefeasible belief, then it is unproblematic for the naturalist to say that we aim at truth. for 'truth' here is just a catch-all for the particular local aims of inquiry—empirical adequacy, predictive power, coherence with other beliefs, simplicity, elegance, explanatory power, getting a reliable guide to action, fruitfulness for other research, greater understanding of others, increased maturity, and the like. There is nothing over and above the fulfilment of those ends, nothing metaphysical, to which we aspire. The pragmatist steps away from metaphysically loaded accounts of truth and steps towards practice. A true belief is one which would be the upshot of our inquiries. (Misak 2007, p. 70)

The rejection of the 'metaphysical' and the alignment of Peirce with 'naturalism' in this passage will need to be dealt with later. For now, we need only note the list of distinct local aims or ideals that are features of some forms of inquiry but not others. While 'greater understanding of others' may be a norm within moral/ethical inquiry, it is not in pure mathematics. Similarly, 'empirical adequacy' does not mean the same thing in ethics and in the physical sciences. Simplicity and elegance have played important roles in physics, whereas attempts to impose simple theories in the biological sphere have had less success. Misak's list could be expanded. In theology, for instance, fidelity to a given religious tradition may be an important norm, while in other forms of inquiry it is not.

Another way of getting at the importance of context for Misak's interpretation of Peirce is to look at what she says about bivalence. Misak notes that Peirce thinks of bivalence as a regulative hope of inquiry, rather than an unbreakable law of logic (Misak 2004, p. 165). That is, we assume of any proposition that we could discover it to be true or false, but there is no guarantee that this is really so. Misak continues: '[i]f it were the case that, no matter how far we were to push our inquiries, there would be no upshot to the question at hand, then we must say that there is no truth of the matter at stake' (Misak 2004, pp. 165–166). As Misak notes, Peirce explicitly says that philosophical questions regarding free will

might end up in this situation (c.f. CP5.565, 1901). Misak suggests there might be a continuum from more to less bivalent subject matters:

> We ought to expect bivalence to fail more often in ethics than in physical science, but moral deliberation nonetheless aims at the truth. We can see that the reality to which ethical judgements fit is not physical reality, yet ethical deliberation is still guided by the surprise of experience. Ethics falls somewhere in between the highly subjective domain of taste and the much more objective domain of the physical sciences. (Misak 2004, p. 169)

Hookway makes a similar point about the difference between moral inquiry and more straight-forwardly factual inquiry.[31] He distinguishes between the kind of explanation that we might offer in cases where agreement on some moral matter is made on the basis of the influence of some particularly charismatic moralist and the kind of explanation we might offer when we agree on the basis of natural-scientific experimentation (Hookway 2000b, p. 76).[32]

A further dimension in which contextual variation affects the truth of a proposition is brought out by Hookway. If we take the proposition whose truth we are considering to be the answer to a certain question, then the purpose for which that question is asked becomes important. For instance, suppose we ask how many leaves are on a tree at a given time. When we confront the tree we may find ourselves having to make decisions which are not determined by the question, but by some additional background purpose or context. Without this background purpose or context there will be no determinate answer to the question. Hookway imagines himself in this position and asks:

> Should I include a brown, gnarled diseased leaf which no longer has a role in sustaining the tree? Should I include a leaf which is suspended from the tree by a thread, about to fall off at any moment? What about new growth just escaping from the bud? In such cases, I must exercise judgement; there is nothing in the semantic content of the question how many leaves are on the tree which determines how I should decide. I cannot be confident that everyone would decide in the same way or even that I would have made the same judgement on another occasion. I may be influenced by reasons for undertaking the count: if it is to be used to assess the health of the tree, the brown gnarled leaf should be excluded; if it is used to assess the shade the tree will produce, it should be included. (Hookway 2000b, pp. 57–58)

The same will be true in other forms of inquiry. For different purposes, different things will fall under the same concept (in this case, the concept 'leaf'). Similar

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[31]Note that this distinction between moral and factual inquiry does not require a hard and fast fact-value dichotomy of the type rejected by almost all pragmatists. As we've just seen Misak say, we can think of both domains as falling on a continuum.

[32]Following out the consequences of this difference would lead us straight to the metaphysical (rather than logical) matters that will be the focus of our attention in the next chapter.

things are true for other descriptive concepts. For instance, consider the use of the word 'flat'. For some purposes it will be true that the table that my laptop currently sits on is flat, for other purposes it will not. It would not, for instance, be 'flat' if the relevant issue is whether a marble would remain still if placed on it.

2.3 Indefeasibility and the Pragmatic Maxim

Some statements of the pragmatic maxim are friendly to this context sensitive approach. For instance, in a late attempt to summarise the pragmatist movement, Peirce characterises the maxim as follows:

> the most perfect account of a concept that words can convey will consist in a description of the habit which that concept is calculated to produce. But how otherwise can a habit be described than by a description of the kind of action to which it gives rise, with the specification of the conditions and of the motive? (EP2:418, 1907)

According to this statement, the kind of clarity about our concepts that the maxim provides requires the specification of the conditions of application of the concept and the motive for applying the concept.

We have already seen that Misak and Hookway both understand a pragmatic elucidation to involve a connection with practice, with Hookway emphasising practical commitments and Misak emphasising the role of expectation. In addition, both think that assertion is the central practice for understanding truth. Part of the motivation for this is the idea that asserting *p* and asserting that '*p* is true' have the same 'force' (c.f. Howat 2015, p. 424). That is, the pragmatic effect or consequences of the respective utterances are the same. This can be true even though the two assertions have different semantic content (one includes the concept 'truth', while the other doesn't). One can read this as the traditional deflationist way as revealing the contentlessness of the term 'truth', or one can go in a slightly different direction. If asserting *p* and asserting '*p* is true' are force equivalent then we can come to grips with the concept of truth by turning our attention to the practice of assertion and its various norms (Howat 2015, p. 430). Hookway's Peircean story of what we commit ourselves to when making an assertion is such an account. For instance, he takes the following to be a norm of assertion: 'when I assert a proposition or accept it as true, then I am committed to thinking that

it would be a matter on which a fated convergence of opinion would be secured' (Hookway 2000b, p. 62).[33]

Before moving on, it is worth facing a possible difficulty in relating Peirce's descriptions of the clarity provided by the pragmatic maxim and the interpretive strategies deployed by Misak and Hookway. We've already seen that, according to Peirce in 1897, a pragmatic elucidation is supposed to provide us with an account of the concept upon which 'fruitful reasoning' can turn and that 'can be applied to the resolution of difficult practical problems'. Hookway and Misak both connect the notion of truth convincingly to the practices of assertion and inquiry. It is less clear how they enable fruitful reasoning using the concept truth or enable the solution of 'difficult practical problems'. However, this difficulty is removed quite easily by noting that, for Peirce, some of the most significant practical problems concern the management of the practice of theoretical inquiry itself. So, for instance, if a great deal of cognitive labour is being wasted on problems about concepts like truth, and if these problems arise as a result of failing to connect the concept with practice in the way that Peirce recommends, then a practical problem has been resolved. A further advantage of the account of truth offered by Peirce is that it limits what counts as a genuine challenge to the truth of some belief. If truth is aligned with the indefeasible in practice, then the only relevant challenge to a belief is one that might be discovered in inquiry. This enables the pragmatist to exclude certain characteristically Cartesian sceptical hypotheses from consideration. This might, likewise, free up intellectual energy to be directed in more fruitful directions.

3   Truth in Baldwin's Dictionary

One way in which pressure can be put on the sufficiency of the contextualist approach is by turning to Peirce's 'definition' of truth in James Baldwin's *Dictionary of Philosophy and Psychology*.[34] The entry begins as follows:

> Truth is a character which attaches to an abstract proposition, such as a person might utter. It essentially depends upon that proposition's not professing to be exactly true. But we hope that in the progress of science its error will indefinitely diminish, just as

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[33]The role of 'force equivalence' is slightly more complex in Hookway's interpretation of Peirce. We will turn to this in Section Three.

[34]Much of Peirce's most creative later philosophical work, while he struggled to publish a monograph, was done in the context of paid contributions to various dictionaries and encyclopedias. This feature of Peirce's later philosophical work is brought out in recent work by Shannon Dea (c.f. Dea 2015, pp. 725–726).

the error of 3.14159, the value given for π, will indefinitely diminish as the calculation is carried to more and more places of decimals. What we call π is an ideal limit to which no numerical expression can be perfectly true. If our hope is vain; if in respect to some question—say that of the freedom of the will—no matter how long the discussion goes on, no matter how scientific our methods may become, there never will be a time when we can fully satisfy ourselves either that the question has no meaning, or that one answer or the other explains the facts, then in regard to that question there certainly is no truth. But whether or not there would be perhaps any reality is a question for the metaphysician, not the logician. (CP5.565, 1901)

Hookway responds to the first two sentences, which seem to paradoxically claim that the only way to make a true claim is to simultaneously say that it is false, as follows:

> The suggestion seems to be that when an assertion is made by someone who carries out inquiries in the scientific spirit, this does not involve a firm commitment to the *truth* of the proposition. It involves quite a complex propositional attitude, one that uses the concept of truth to articulate an ideal to which the asserted proposition does not fully measure up. In that case, asserting a proposition commits me to its 'approximate truth', not to its exact truth. If that is correct, a difference opens up between *asserting that p* and *asserting that it is true that p*. Peirce might argue that if I claim that a proposition is *true*, I go beyond this commitment to approximate correctness. (Hookway 2000b, pp. 64–65)

Here, we see Hookway opening up room for a difference between asserting that p and asserting that 'p is true'. He suggests that this occurs when someone makes assertions in the 'scientific spirit'.

This gap has recently been raised as a problem for Hookway by Andrew Howat. As noted in the previous section, Howat brings out the importance of force equivalence for Hookway and Misak's accounts of the assertion-truth connection. He then points to this passage in Hookway as a problem for the pragmatist account of truth. Once the distinction between those domains of discourse where force equivalence applies and those where it doesn't is admitted, we will need some account of why the lines between discourses fall where they do (Howat 2015, pp. 434–435). Hookway suggests that the difference is between the scientific and non-scientific contexts; Howat doesn't accept this approach.[35]

However, if an alternative interpretation is possible this demarcation problem need not arise.[36] I suspect that we have too quickly assumed that we know what

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[35]Howat points to the later section of the Baldwin entry where Peirce claims that '[t]he same definitions hold for the propositions of practical life' (CP5.568, 1901; cited in Howat 2015, p. 435). If the same 'definitions' hold in both cases, then the force equivalence problem will arise in both too.

[36]Howat tentatively offers a solution to the problem in terms of a lexical ambiguity in the word 'truth': sometimes it means 'accuracy', a matter of degree, and sometimes it means 'correctness',

Peirce means by 'exact truth'. This move is made by Hookway when he supposes that Peirce thinks that the assertion of '*p* is true' is equivalent to the assertion '*p* is exactly true'. If we can offer an interpretation according to which there are two notions of truth, one which applies to 'abstract propositions' and one which applies to the 'ideal limit', then there will be no problem with force equivalence.[37]

This alternative attempts to take the first two sentences of Peirce's definition literally. According to Peirce, the truth of a proposition 'essentially depends' on its 'not professing to be exactly true'. It is a simple inference from this to the claim that no proposition that asserts its own 'exact truth' can be true. Consequently, any claim of the form 'p is exactly true' is false. This is not a good result if we want, as Hookway's interpretation requires, for 'p is true' to be equivalent to 'p is exactly true'.

Taking Peirce literally, we are left with the need to provide a characterisation of what he means by 'exact truth'. We will also need to make sense of the claim that a proposition might 'profess' something about itself. This might allow us to make sense of the claim that any proposition that 'a person might utter' somehow involves a confession of its own limitations. In the next section I'll argue that recent work on Peirce on the proposition can help us with both issues.

Before turning to the attempt to fill in these gaps, let's look a little more closely at the mathematical metaphor Peirce deploys. In the metaphor we are to think of numerical expressions as propositions 'such as a person might utter'. That is, in this metaphor the propositions we might utter are co-extensive with the rational numbers. However, the metaphor embeds these 'propositions' within the real numbers. The propositions we might utter are then able to be part of an infinite sequence that converges on a real but not rational number. However, these sequences cannot *include* a real but not rational number. In Peirce's metaphor then, while π needs to be acknowledged to make sense of some process whereby the propositions we utter change over time, it is not a proposition that 'a person

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which is a binary notion. In the former case force equivalence does not apply, in the latter it does (Howat 2015, pp. 436–437). I will attempt, instead, to offer an interpretation of Peirce that prevents the force equivalence problem from arising at all.

[37]We will need additionally to ensure that the assertion '*p* is exactly true' and the assertion that *p* are not force equivalent. This will be obvious once we have cashed out the notion of 'exact truth' more thoroughly under the heading 'absolute truth'. As already intimated, the one proposition which comes out as 'absolutely true' on Peirce's account will not be one that it is possible to assert.

might utter'. Peirce's deployment of this metaphor provides a further motivation for thinking that, whatever the 'exact truth' is, it is not an everyday proposition.[38]

4 Peirce's Semeiotic Account of the Proposition

4.1 Propositional Self-Reference and the Liar

Peirce offers an original account of the proposition within his theory of signs, or semeiotic. Some of the details of this account will be necessary in order to understand Peirce's account of truth. For example, the passage from *Baldwin's Dictionary* requires us to make sense of the idea of a proposition 'professing' something about itself. That is, some account of propositional self-reference is required.[39]

The notion of propositional self-reference develops over time in Peirce's work. An important part of the story is that, between 1869 and 1896, Peirce offered a solution to the liar paradox which turned on the claim that all propositions represent themselves to be true (Atkins 2011, p. 424). The liar paradox is the problem of dealing with 'liar sentences' of the form 'this sentence is not true'.[40] If a sentence of this form is true, then it is not true; and if it is not true, then it is true. Atkins quotes the following passage from Peirce:

> A proposition is true only if whatever is said in it is true, but is false if anything said in it is false
> [...] *[E]very proposition asserts its own truth.*
> The proposition in question [i.e. LP], therefore, is true in all other respects but its implication of its own truth. (EP1:74/W2:262–3, 1869; cited in Atkins 2011, p. 424)

As Atkins interprets the argument, Peirce reasons from the fact that the liar proposition is manifestly odd, and that there is no *explicit* feature of it that is odd (it has normal propositional form for instance), to the conclusion that the paradox-generative feature of the proposition is implicit (Atkins 2011, p. 424). The assertion made by each proposition of its own truth is understood to be implicit. If each proposition implicitly asserts its own truth then the liar sentence both implicitly asserts its truth while explicitly denying it. That is, the liar proposition is self-contradictory and therefore false.

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[38]For a much more detailed exploration of Peirce's 'limit' metaphor for truth see Legg 2014a.

[39]More accurately, it depends on the proposition *not* professing something about itself. We will in a moment that Peirce has a broader story to tell about propositional self-reference.

[40]Atkins calls this sentence 'LP'.

However, as Atkins notes, in 1903 we find Peirce going back on this account of the liar paradox. For one thing, Peirce takes his former argument to beg the question. His proof that the liar sentence is self-contradictory depends on the claim that every proposition asserts its own truth, while his proof that every proposition asserts its own truth relies on the claim that the liar sentence is self-contradictory (Atkins 2011, p. 425).

In addition, Peirce offers a series of arguments against the claim that a proposition can represent itself to be true. If these cannot be side-stepped then the proposal to understand everyday truth in terms of an acknowledgement of a failure to be 'exactly true' will not get off the ground. Atkins covers three distinct arguments made by Peirce to this conclusion. The first notes that the theory makes the propositions 'it rains' and 'I assert that it rains' equivalent. If these were equivalent, then their negations should be as well. However, 'it does not rain' and 'I do not assert that it rains' are not equivalent (EP2:167, 1903; cited in Atkins 2011, pp. 425–426).[41]

The final argument touches more directly on our present concerns. According to this argument, a proposition indicates its object by means of an indexical relation. Roughly speaking, it must be able to point to its object. But, according to Peirce, the only things that can be 'pointed out' in this fashion are things which are already 'real'. To be 'real' is to have whatever properties you have independent of your being represented to have those properties by some person or particular group of people.[42] For a proposition to be able to assert its own truth, it must be able to relate to itself as an object that is real in this sense. But, Peirce claims, before a proposition is enunciated, it is not independent of representation in this sense (Atkins 2011, p. 427). In another text from the same year, 'Sundry Logical Conceptions', Peirce claims that 'a Symbol cannot even have itself as its Object; for it is a law governing its Object' (EP2:276, 1903). On Peirce's view, a law has to govern something other than itself (c.f. EP2:345, 1905). In order to make sense of the claim that a proposition can present itself as 'not exactly true' we will need to look for the possibility of a non-symbolic form of self-reference within Peirce's account of the proposition.

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[41]The second argument turns on a court room example in which person A testifies that person B's testimony is true, while person B testifies that person A's testimony is false. 'Common sense' declares in this case that nothing has been conveyed (EP2:167, 1903; cited in Atkins 2011, p. 426).

[42]For instance, Earth has the property 'orbits the sun' regardless of whether any group of people think that it does. Therefore, Earth is real. We will return to Peirce's account of reality ascriptions in the next chapter.

4.2   Signs and Dicisigns

Peirce provides an account of propositions in the context of his wider theory of signs.[43] Semeiotics, a general account of the varieties of signs and their distinct roles in cognition, was a preoccupation for Peirce throughout his career.[44] The long period of time over which Peirce worked on signs, along with his isolation from others working on the same issues, led to a massive proliferation of sometimes-conflicting terminological choices in different texts.

Peirce characterises signs in the following terms:

> I will say that a sign is anything, of whatsoever mode of being, which mediates between an object and an interpretant; since it is both determined by the object *relatively to the interpretant*, and determines the interpretant *in reference to the object*, in such wise as to cause the interpretant to be determined by the object through the mediation of this 'sign'. (EP2:410, 1907)

The key thing to note here, which will be elaborated as we go on, is that the sign relation has three parts: the object, the sign, and the interpretant. Each is a necessary ingredient in sign use. Note also that the interpretant is, by the action of the sign, 'determined by' the object. If the interpretant is itself a sign, as will usually be the case,[45] it will be subject to further interpretation which will similarly relate back to the original object.

Peirce's account of the proposition starts with the idea that propositions are signs that 'say something about something' (Stjernfelt 2014, p. 51). According to Peirce, the easiest mark of whether something is a proposition or not is that 'a [proposition][46] is either true or false, but does not directly furnish reasons for its being so' (EP2:275, 1903). The proposition is unlike a term, which is neither true nor false, nor is it like an argument, which presents reasons for the acceptance of

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[43]T. L. Short argues that propositions cannot be equated with any of the kinds of sign that are provided in Peirce's semeiotic taxonomies. His worry is that the various semeiotic entities Peirce aligns with propositions are defined in such a way that they are relative to a particular language, while he also thinks that a proposition is the kind of abstract entity that can remain the same while expressed in different languages (Short 2007, p. 245). In the discussions of the proposition that I lean on in this chapter, Peirce starts with a characterisation of the proposition as the kind of sign that can be true or false, rather than with the idea that a proposition is an abstract object held constant across synonymous sentences in different languages. Since it is truth that we are centrally interested with here, I will leave these issues of synonymity unanswered.

[44]According to Max Fisch, it was his primary preoccupation (W1:xxii, 1982; cited in Bergman 2009, pp. 1–2).

[45]Perhaps always, if you accept 'semiotic idealism' *a la* Ransdell (c.f. Ransdell 1997).

[46]Here Peirce uses the generalised term 'dicisign'. More detail on this terminological choice will be given below.

its conclusion. A 'proposition is a sign which separately, or independently, indicates its object' (EP2:307, 1904). This is in contrast to a bare index, which merely indicates its object. Instead, a proposition both points out its object and characterises it. Only in so doing can it make a truth claim. Peirce takes the proposition to include an iconic part (which characterises the object) and an indexical one (which points out the object). Stjernfelt cites the following to emphasise the functional character of Peirce's account of the proposition: 'Thus, every proposition is a compound of two signs, of which one functions significantly, the other denotatively. The former is intended to create something like a picture in the mind of the interpreter [the icon], the latter to point to what he is to think of that picture as being a picture of [the index]' (R284, p. 43, cited in Stjernfelt 2014, p. 58).

The distinction between icons, indices, and symbols is probably the most well-known Peircean semiotic triad.[47] This trichotomy divides signs according to how they represent their object. The icon is related to its object by resemblance, or simply by virtue of possessing the quality that it signifies. For instance, a portrait represents by virtue of visual similarity between it and its object. An index represents by virtue of being really connected with its object. Causal examples are the easiest to highlight. For instance, a hoof-print in a muddy field indexes the presence of a horse at some point in the near past. A symbol, on the other hand, is connected with its object simply by virtue of it being taken to be by its interpreter. For instance, the word 'dog' signifies by virtue of the conventions of the English language rather than being directly, even efficient causally, related to dogs or in some sense resembling a dog.[48]

It is important to note that the characterisation of a proposition as the kind of sign compounded of an icon and index of the same object captures a wider range of signs than is usual. For instance: a weathercock both indexes the direction of the wind by being causally connected to it, and provides an icon in the form of an arrow which functions as an icon of the direction of the wind (c.f. EP2:306, 1904). The weathercock thus makes a truth claim, which, if the weathercock is faulty, may come out false. The Peircean account of propositions has been applied recently by Stjernfelt to include animal sign use, certain images, and even video footage (e.g. 2014, pp. 180–187). Given the wide net that his account casts, Peirce sometimes

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[47]Aside from it's being reasonably well know in its own terms, the distinction is also in the background of the much more ubiquitous syntax/semantics/pragmatics distinction. This latter distinction was coined by Charles Morris as an attempt to interpret the former (Cummings 2009).

[48]For a clear summary of the division see EP2:306–307, 1904 or EP2:4–10, 1894.

thought a new technical term was in order rather than continuing to use the term 'proposition'. One term he commonly deploys is 'dicisign'. In 'Sundry Logical Conceptions' we see Peirce using 'dicisign' for the general notion and 'proposition' to mean a symbolic (as opposed to indexical, e.g. the weathercock) dicisign (EP2:282, 1903).[49]

4.3 The Doctrine of the Double Object

A straightforward reading of the claims made so far would be to take the icon and the index as simply relabellings of the traditional idea of 'subject' and 'predicate' respectively. Perhaps more sympathetically, we might accept the generalisation from linguistic subjects and predicates to the wider field of 'dicisigns', but still think that no major advance has been taken. However, there is more to Peirce's account. According to Peirce, a proposition must have two distinct objects: the 'primary object', which is the object that is indexed by the proposition, and the 'secondary object', which is the indexical connection between the proposition and its object.

Why does Peirce think the proposition has two objects? He offers an answer in a very dense deduction of the various features of the proposition/dicisign in 'Sundry Logical Conceptions' (EP2:275–277, 1903). Stjernfelt offers a nice statement of the conclusion we are interested in:

> For a first glance, the Dicisign says: 'Here is an object O, and it has the property P'; the ['Sundry Logical Conceptions'] deduction now claims that this is only a shorthand, made possible by an underlying, more complicated structure which may be given the following colloquial paraphrase: 'Here is an object O, really connected to this sign, and this connection grants the truth of this sign's further claim that this predicate holds of that object: P'. (Stjernfelt 2014, p. 72)

The relevant steps in Peirce's argument are as follows:

- Since a proposition does not provide reasons for its truth, it must be interpreted as as a 'genuine Index' of its object.

- The interpretant of the proposition 'represents a real existential relation as subsisting between the [proposition] and its real Object'.

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[49]Another important extension of the notion of a proposition is made by Peirce under the heading 'pheme'. This generalisation attempts to incorporate interrogatives and commands (Bellucci 2014).

- The interpretant of a sign 'can represent no other Object than that of the Sign itself', so the proposition must also have his 'existential relation' as an object (EP2:276).[50]

On Peirce's view, then, the proposition claims itself to be in an indexical relation to its (primary) object. Further, Peirce claims this relation is iconised by the syntactical link between the predicate-part and the iconic-part of the proposition. In any token of the proposition the predicate and subject parts, simply by sitting next to one another, provide an icon of the claimed link between the proposition and its object (Stjernfelt 2014, p. 69). Consider, for instance, a portrait of the Queen with a label on the frame saying 'Queen Elizabeth II'. The primary object of this dicisign is the Queen herself, while the 'predicate' part possesses colours which are claimed to resemble the Queen. The label 'Queen Elizabeth II' on the frame then signifies by co-location the claim that this portrait is in a real indexical relation with the Queen.[51] A more conventional example would be the proposition 'Robin Hood was born in Loxley'. This proposition can be analysed into a name 'Robin Hood', which functions as an index, and an unsaturated predicate '-was born in Loxley', which functions as an icon.[52] Peirce's claim seems to be that the co-location of the words 'Robin Hood' and the predicate '-was born in Loxley' signifies the indexical connection between the proposition 'Robin Hood was born in Loxley' and the figure, whether fictional or not, of Robin Hood.

We need to add two further details before returning to *Baldwin's Dictionary*. The first is to introduce the role of 'collateral experience' in indexical reference.[53] According to Peirce, no indexical reference is possible absent experience shared by both utterer and interpreter. Peirce holds that 'no sign can be understood—or at least that no *proposition* can be understood—unless the interpreter has "collateral acquaintance" with every Object of it' (EP2:496, 1909; cited in Stjernfelt 2014,

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[50]I have substituted 'proposition' for 'dicisign' here. This is to distort the structure of *Sundry Logical Conceptions*, which begins with a derivation of the features of the dicisign and then later shows that propositions in the narrower sense satisfy the derived description (EP2:279–282, 1903).

[51]This example is adapted from Stjernfelt 2014, p. 70.

[52]Peirce did not think that the copula, in this case 'was', should be considered an additional part of the proposition. To think otherwise is, Peirce thinks, to privilege Latin over Greek (EP2:308–309, 1904). Allowing one's logical views to be influenced by this kind of linguistic detail is 'no better than an unsatisfactory method of ascertaining psychological facts that are of no relevancy to logic' (EP2:309, 1904).

[53]More might be said about the role of the icon in Peirce's account of the proposition. However, we do not need that level of detail to make out what Peirce means by 'exact truth'. For more detail on the issue see Hookway 2012a and Stjernfelt 2014, pp. 61–64.

p. 80). Peirce variously uses the terms collateral 'acquaintance' (e.g. EP2:496, 1909), 'experience' (e.g. EP2:480, 1908), and 'observation' (e.g. EP2:404, 1907). I will use these terms interchangeably. 'Collateral experience' is not to be thought of as part of the sign, but as necessary for the sign to function. In Stjernfelt's words, the index part of the proposition is 'simply there in order to activate' our collateral knowledge. If it fails in this task, the sign is 'not able to function as a Dicisign at all' (Stjernfelt 2014, p. 83).

In a late attempt to characterise his own pragmatism, and its relations to those of James and Schiller, Peirce derives his account of signs by abstracting away from features of everyday communication.[54] In everyday communication there is an utterer and an interpreter for any given sign. Peirce then develops a conception of the object of a sign by finding the 'ingredient' of the utterer needed for something to function as a sign.[55] One feature of the utterer which Peirce thinks must be maintained in the conception of the object is the idea that the utterer is something distinct from the sign and is needed for the sign to function. Knowledge of the utterer (or the object), cannot, for Peirce, be derived entirely from a study of the sign, it must come from some external or 'collateral' source. Peirce offers an example:

> Toward the end of a sultry afternoon, three young gentlemen are still lounging together; one in a long chair, one supine upon a lounge, the third standing by the open casement that looks down seven stories upon the Piazza di Spagna from its Pincian side, and seems to be half glancing at the newspaper that has just been brought to him. His is one of those natures that habitually hold themselves within the limits of extreme calm, because they too well know the terrible expense of allowing themselves to be stirred. In a few moments, he breaks the silence with the words, 'Verily, it is a terrible fire.' What does he mean? The other twain are too lazy to ask. The longchaired one thinks the utterer was looking at the newspaper when he made his exclamation, and concludes that there has been a conflagration in Tehran, in Sydney, or in some such place, appalling enough to be flashed round the globe. But the couched man thinks the utterer was looking out of the window, and that there must be a fire down in the Corso, or in that direction. Here is another case where the whole burden of the sign must be ascertained, not by closer examination of the utterance, but by collateral observation of the utterer. (EP2:405–6, 1907)

Collateral information or observation is that which is external to the sign, and which is required for us to determine the object of the sign. What the man at the open window meant by 'it is a terrible fire' must be ascertained by attaining further information about the utterer. If the other two men in the room were less

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[54] This approach to Peirce's semiotics is favoured by Bergman 2009 and Colapietro 2007.

[55] Peirce does not think that all signs have utterers. Consider, for instance, medical symptoms as signs of an underlying disease (EP:404, 1907).

lazy they might look up to see whether the utterer sets aside his newspaper and continues staring out the window, or they might simply ask him what he meant. It is similar in the case of the object of a sign in general. We need some experience which enables the sign to refer.[56]

The second detail we need to introduce concerns abstraction. For Peirce, both the iconic and indexical features of dicisigns are abstractions. Peirce distinguishes between two varieties of abstraction, both of which play a role in his account of propositions (and facts):

> *Abstraction* names two wholly different operations. One of them consists in supposing some feature of the fact to be absent, or at least leaving it out of account. I call that *prescissive abstraction*. The other changes 'This man is shy' to 'This man is affected with shyness'. [. . .] In non-prosaic language it changes a predicate into a subject (extending the term subject beyond the subject nominative to the subject accusative and subject dative,—in short, to what are called the direct and indirect *objects* of the verb). 'The rose smells very sweetly' is by hypostatic abstraction converted into 'The rose possesses a delightful perfume.' So 'Cain killed Abel' is changed to 'Cain caused the death of Abel.' Perfume and death are *hypostatical abstractions*. (R96:9–10, c. 1904–1905; cited in Bergman and Paavola 2017)

In what remains of this section I will consider the role of prescissive abstraction in Peirce's account of the proposition. Hypostatic abstraction will be considered later.

The dicisign involves prescission in so far as it requires us to attend to a particular thing to the exclusion of everything else. We are to pick out, *via* an indexical relation, the object of the dicisign. The dicisign also requires us to attend to particular features of the thing picked out by means of the icon. This feature of dicisigns is brought out most clearly in Peirce's account of the role of prescission in perception. The perceptual process involves the conversion of a 'percept' into a 'perceptual judgement':[57]

> I maintain that logical criticism cannot go behind *perceptual facts*, which are the first judgments which we make concerning percepts. A perceptual fact is therefore an abstract affair. Each such fact covers only certain features of the percept. I look at an object and think that it seems white. That is my judgment of the object perceived, my judgment concerning the percept, but not the percept itself; and it is idle to attempt to criticize, by any logic, that part of the performance of the intellect which draws that judgment from the percept, for the excellent reason that it is involuntary and cannot be prevented or corrected. Such a fact, which represents the percept in a very meagre way, although it is, in itself, a relatively isolated fact,—as isolated as any fact can be,—nevertheless does not, in itself, call for any explanation. (EP2:92, 1901)

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[56]Stjernfelt offers the further specification that collateral information determines the universe of discourse (Stjernfelt 2014, pp. 81–82).

[57]For a more detailed account of Peirce's theory of perception see Legg 2014b.

Our perceptual judgements always leave something in the percept unstated. They do not take up everything available. That is, in a perceptual judgement we must focus attention on some aspect of the percept at the expense of others. This is a clear case of a pattern that applies to dicisigns more generally. To pick out a subject we must exclude everything else, and to characterise that subject we must leave some of its features unstated. Both are cases of prescissive abstraction.

We are thus left with an account of propositions according to which they depend on shared experience of their speakers and hearers in order to establish an indexical link with their objects. We have also seen that this connection with experience means that all propositions that we might use are the result of prescissive abstraction. Moreover, as part of the 'doctrine of the double object', this abstractive relationship with experience is iconically depicted by the colocation of the iconic and indexical parts of the proposition. This is enough background to turn again to Peirce's conception of the truth and falsity of proposition and to the distinction between 'exact' or 'absolute' truth on the one hand, and the contextualist notion on the other.

5 The Truth and the Absolute Truth

5.1 Truth and the Dicisign

Atkins has recently drawn out some of the consequences of the semeiotic conception of the proposition for our understanding of Peirce's account of truth. Atkins holds that, according to Peirce, propositions and facts are isomorphic (Atkins 2016, p. 1182). Peirce expresses something like this idea in the following passages:

> A *state of things* is an abstract constituent part of reality, of such a nature that a proposition is needed to represent it. There is but one *individual*, or completely determinate, state of things, namely, the all of reality. A *fact* is so highly a prescissively abstract state of things, that it can be wholly represented in a simple proposition, and the term 'simple,' here, has no absolute meaning, but is merely a comparative expression. (EP2:378, 1906)

and

> What we call a 'fact' is something having the structure of a proposition, but supposed to be an element of the very universe itself. The purpose of every sign is to express 'fact,' and by being joined with other signs, to approach as nearly as possible to determining an interpretant which would be the *perfect Truth,* the absolute Truth, and as such (at least, we may use this language) would be the very Universe. (EP2:304, 1904)

The notion of the 'absolute' or 'exact' truth can be made out by focusing on the notion of 'the all of reality' or the 'absolute Truth'. However, we can first follow Atkins in his account of the isomorphism between propositions and (prescissively) abstract facts.

On Atkins' story, we are to think of facts as including an iconic part and an indexical part. The iconic part is understood in terms of a notion of structure, and the indexical by a notion of causation. Atkins introduces the relevant idea of structure by means of Peirce's anti-nominalism:

> Peirce endorses scholastic realism. He believes that there are real, general features of the universe. Noun terms like *gravity, red,* and *horse* and relative terms like *resembles, causes,* and *represents to* are not mere vocables or creations of reason. They are that, to be sure, but they also track real, general features of the universe.
>   [. . .] This, then, is one point of structural isomorphism between propositions and facts: the rhemes of true propositions are isomorphic with real features of the universe.[58] (Atkins 2016, pp. 1183–1184)

In a true proposition, then, the iconic part of the dicisign will be isomorphic with some real, general, feature of reality. In false propositions, they will not. Atkins offers the example of propositions using predicates involving the concept *phlogiston*. For example, we might attempt to explain why my bike chain has become rusty by saying that 'the chain has lost some of its phlogiston'. However, the behaviour of this predicate will not match the behaviour of what is going on in the chain.[59] That is, there is no isomorphism between the proposition and the real phenomenon. This is, of course, because the proposition is false.

To make sense of the isomorphism between the indexical part of a proposition and a fact, Atkins turns to the relationship between indexicality and causation. Atkins notes that 'on Peirce's view facts themselves are *causally efficacious*' (Atkins 2016, p. 1184). But rather than focusing on efficient causation, Atkins argues that 'Facts are causes of and are caused by other facts, in an Aristotelian sense of "cause" as an explanatory principle' (Atkins 2016, p. 1185). Atkins continues, 'facts are causally efficacious in that they cause other facts, including the fact that our attention is drawn to some feature of the universe' (Atkins 2016, p. 1185).[60]

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[58]'Rheme' is another of Peirce's terms for the icon-part of the proposition (e.g. EP2:285, 1903).

[59]This will, presumably, be made manifest when we draw out experiential consequences from the use of the concept.

[60]As a result of this analysis of facts and true propositions Atkins offers a distinct response to the problem of buried facts that we considered above. According to Atkins we should understand there to be a reality but no 'fact' whether Russell lit an even or uneven number of pipes in his lifetime.

This way of stating things leads us too far in to metaphysics.[61] We will see in the next chapter that this account of facts can be introduced in order to explain the truth of various propositions, rather than being used as a mark of the truth of propositions. As a result, I think it's best to try to make out the necessary points here without introducing a heavy-duty scholastic realism. Nor do we need to introduce Aristotelian final causes (at this stage at least).

We need, then, to state this account of the truth of propositions using only the materials available to logic in the hierarchy of the sciences. We are not, in this task, to appeal to metaphysics or the natural and social sciences for principles. We can appeal, instead, to mathematics, phenomenology, esthetics, and ethics. Two strategies suggest themselves here. One would be to work through the 'pre-logical' sciences developing the various resources that Peirce himself uses here. One of the primary things we would have to do here is develop Peirce's three categories: firstness, secondness, and thirdness, from scratch.[62] To do this properly would require a lot more detail than I am able to provide. The alternative is to attempt to align the semeiotic account of the proposition with the account of Peirce on truth that we took earlier from Misak and Hookway.

Recall that Misak and Hookway's account of Peirce on truth holds that a true proposition is the one which, if believed, would be indefeasible. To believe a proposition is, Peirce thinks, to have 'a controlled and contented habit of acting in ways that will be productive of desired results only if the proposition is true' (EP2:312, 1903). The semeiotic account of the proposition adds an account of how the proposition is something which can be acted upon. The proposition has one part which either is an index or provides the information required to come to be in an indexical relationship with relevant objects. It also characterises that object in ways that enable us to take on expectations regarding either what will happen if we

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Atkins also notes the late Peircean distinction between 'occurrences' and 'facts'. An 'occurrence' is a 'slice' of reality in complete detail, while a 'fact' is something abstracted from the occurrence for some descriptive or explanatory purpose (Atkins 2016, pp. 1183–1185). No collection of such 'facts' could entirely capture an 'occurrence'.

[61]Peirce notes his own tendency to express logical views that need not be expressed metaphysically in metaphysical terms:

> The logician is not concerned with metaphysical theory; still less, if possible, is the mathematician. But it is highly convenient to express ourselves in terms of a metaphysical theory; and we no more bind ourselves to an acceptance of it that we do when we use substantives such as "humanity," "variety," etc., to speak of them as if they were substances, in the metaphysical sense." (EP2:304, 1904)

[62]The core Peircean texts for this project would be his 1903 Pragmatism Lectures. In this series Peirce develops the categories phenomenologically, then shows how they play out in esthetics and ethics, logic, and metaphysics (EP2:133–241, 1903).

act in a certain way or what we will observe if we get ourselves into the right circumstances. The true proposition is, we have seen, one which does not lead to disappointment.

We have also gained an appreciation for the role of abstraction in our use of propositions. Our indexical relations with the world require us to select some particular object rather than others. We attend to one thing, rather than others. Moreover, as Atkins says, there will typically be some causal connection involved. If I attempt to test, for instance, whether 'there is still tea in the pot' is true, I put myself into a position where I can be in the right kind of relation with the tea (say, by taking the lid off the pot). The answer will then force itself on me. This relies on putting myself into a relation with a specific part of my experience. It also requires me to have an understanding of a general concept like 'tea', which tells me what to expect when I take off the lid of the teapot. Insofar as action on the basis of propositions is successful, we can say that the index is connecting us with something other than ourselves, and that the general concepts we are deploying are successful abstractions from experience.

This mix of Misak, Hookway, and Atkins is a merely contextualist understanding of Peirce on truth. The means of testing a given abstract proposition will be dependent on the purposes for which we are attending to one thing rather than another. The relevant standards can then vary according to context in the way that we saw Misak and Hookway set out above. However, we already have most of the resources needed to add the 'absolute' conception on top of the contextualist story.

As suggested above, there is room for a 'two truths' interpretation of Peirce something like the one defended by Almeder. Almeder defends a conception of Peirce on truth according to which:

> Peirce defined truth (with a capital T) in terms of correspondence and reckoned such correspondence the property of the final opinion destined to be agreed upon by the community of scientific inquirers; and he defined knowledge in terms of this final irreversible opinion. This, I think, will be generally granted. But I submit that there is a good reason to think that Peirce was also committed to the view that truth is a property of propositions warrantedly assertible under the canons of acceptance relative to one's current conceptual framework and that knowledge is to be understood in terms of propositions that are so warrantedly assertible. After all, he frequently urged that we must consider as true those propositions which are inductively established by the method of science even though the truth value assigned to the propositions may be subsequently revised in the light of future evidence. (Almeder 1980, p. 55)

The absolute truth, on Almeder's view, is truth according to the 'final' theory. On Almeder's view, only this final theory 'corresponds' with reality. The 'everyday'

truth, or truth relative to context, is what is warrantedly assertible according to our current conceptual framework.[63]

My own proposal does not depend on the notion of correspondence to characterise the final opinion.[64] I will work up to a conception of the absolute truth by following two periods in Peirce's references to the Absolute.[65] Peirce in some places refers to the 'Absolute' as the 'limit of experience', and in other places as the 'final interpretant' towards which all sign use tends. I will take each of these themes in turn. The conception of the Absolute as a 'limit of experience' seems to allow for many propositions to be 'absolutely true'. Consideration of the absolute truth as 'final interpretant' shows that, ultimately, Peirce thinks only one proposition can be absolutely true. Both themes reveal some way in which the propositions we take to be true always leave something more to be said.

5.2 Absolute Truth as the Limit of Experience

5.2.1 The Limit of Experience

We saw above that in so far as a proposition functions as a sign which conveys information, it must be interpreted as claiming a real connection with its object. We've also seen that this connection depends on collateral experience. In this section, I turn to Peirce's arguments that experience cannot support claims to absolute exactitude. This renders any ordinary proposition we might utter inexact to some degree. However, in so far as we can make sense of a 'limit of experience', we can begin to make sense of the notion of absolute truth.

That Peirce has something like this in mind can be backed up by another passage from a few years before the *Baldwin's Dictionary* entry:

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[63]Wilfrid Sellars derives something like this conception of absolute truth from Peirce. There is a notion of assertibility for a given conceptual framework or language, and on top of that an idealised language called Peirceish which provides adequate 'pictures' of the world (c.f. Sellars 1968, pp. 116–123).

[64]Cooke challenges Almeder's proposal that correspondence only obtains between the world and the 'final opinion' on the grounds that he misrepresents what '*p* is true' means for an everyday proposition. In particular, he fails to see that, as the *Baldwin's Dictionary* article makes clear, such propositions cannot be claims of 'absolute truth' (Cooke 2006, p. 103).

[65]Excluding Peirce's occasional remarks that his version of pragmatism, unlike some others, does not deny the reality of the Absolute. In one place he even says that '[t]he chief [doctrine associated with pragmatism that Peirce does not follow] is the entire denial of the Absolute' (R284:2, c. 1905–1906). This suggests that Peirce may have been happy with Royce's coinage of 'absolute pragmatism' to refer to the views that they both held, in contrast with the pragmatisms of James and Dewey (c.f. Anderson 2005).

> I carry [synechism] so far as to maintain that continuity governs the whole domain of experience in every element of it. Accordingly, every proposition, except so far as it relates to an unattainable limit of experience (which I call the Absolute), is to be taken with an indefinite qualification; for a proposition which has no relation whatever to experience is devoid of all meaning. (EP2:1, 1893)

Here Peirce does not directly deny the possibility of uttering a true proposition about 'the Absolute'. However, he does introduce the idea that, at least most propositions, are 'taken with' an indefinite (and unexpressed) qualification. However, even if we might say something about the Absolute, we acknowledge that it is unattainable. That is, if the Absolute is the position one would occupy at the 'limit of experience', then the claim seems to be that we can speak *about* such a position, but never *from* it.[66] Peirce goes on to offer some examples of 'inexact' truths:

> Thoroughgoing synechism will not permit us to say that the sum of the angles of a triangle exactly equals two right angles, but only that it equals that quantity plus or minus some quantity which is excessively small for all the triangles we can measure. We must not accept the proposition that space has three dimensions as strictly accurate; but can only say that any movements of bodies out of the three dimensions are at most exceedingly minute. We must not say that phenomena are perfectly regular, but only that the degree of their regularity is very high indeed. (EP2:2, 1893)

Peirce does not use the term 'true' in this passage. However, it is not a stretch to interpret 'accepting' a proposition as 'accepting that the proposition is true'.[67] The three propositions Peirce is considering here are that 'the sum of the angles of a triangle equal two right angles', 'space has three dimensions', and 'phenomena are regular'.[68] It would be easy to read this passage as suggesting that we should not

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[66]Note also the appeal to the pragmatic maxim. This comes when Peirce says that a proposition that 'has no relation whatever to experience is devoid of all meaning'.

[67]We would need to look elsewhere in Peirce for accounts of the various ways one might 'accept' a proposition as true. For instance, in some cases, Peirce wants to reserve the word 'belief' for a particularly practically engaged form of 'holding for true', in other cases he uses the term 'belief' to refer to any kind of 'holding for true' (e.g. EP2:56, 1898). One might also look to Peirce's related distinction between 'theoretical' and 'practical' belief (CP5.538, 1902).

[68]The first example may be puzzling: doesn't the claim in question follow from the definition of a triangle and some simple mathematical reasoning? It is best to interpret Peirce as referring to triangles in real space here, rather than to triangles which are *by hypothesis* embedded in a Euclidean space. The geometrical nature of real space was one of Peirce's major concerns in the 1890s. So, for instance, Peirce characterises geometry as sitting somewhere between philosophy and physics: 'It is apparent now that geometry, while in its main outlines, it must ever remain within the borders of philosophy, since it depends and must depend upon the scrutinizing of everyday experience, yet at certain special points it stretches over into the domain of physics' (CP1.249, 1902). This is to place geometry outside of mathematics, which, Peirce thinks, does *not* depend on scrutinising everyday experience (e.g. EP2:259, 1903). In fact, it was a very prescient move for Peirce to take real space to depart from Euclidian geometry (Dipert 2008; Murphey 1993, pp. 219–227).

make claims like 'space has three dimensions' without adding an explicit qualification 'space has (pretty much) three dimensions', or something of that sort. But this would be a mistake. If these propositions are such that they can be 'taken with an indefinite qualification' implicitly, then we can make sense of these propositions as being straightforwardly true, while the corresponding propositions that contain an explicit claim to exactitude will come out as false. For instance, the proposition 'space has *strictly* three dimensions'.

The 'indefinite qualification' we are looking for can be found in the dependence of any proposition on collateral experience. We have seen that the proposition must be interpreted as making a truth claim, and that this claim exhibits a connection to experience. Consequently, we need to turn to Peirce's account of experience and of what it can and cannot justify. The basic idea here is that any proposition made on the basis of experience will be able to be made, for instance, more precise.

5.2.2 What Experience Cannot Justify

Peirce tends to group together a few limitations on experience. He holds, for instance, that 'experience can never result in absolute certainty, exactitude, necessity, or universality' (CP1.55, 1896).[69] Peirce usually adds the qualification that this does not apply to propositions about the Absolute (as above) or 'the *A* and the Ω' (CP6.607, 1893). It is worth distinguishing the properties that Peirce denies of propositions that are based in experience. While we are interested primarily in 'exactitude' for the purpose of interpreting the *Baldwin's Dictionary* entry, similar arguments will apply to the claim to certainty, necessity, and universality. This broadening of view will also enable us to transition from the idea of the 'exact truth' to the 'absolute truth' more broadly construed. The distinction between exactitude, certainty, necessity, and universality can be understood by looking at a subject which doesn't rely on experience in the same way philosophy or the sciences do, namely, mathematics:

> Among the minor, yet striking characteristics of mathematics, may be mentioned the fleshless and skeletal build of its propositions; the peculiar difficulty, complication, and stress of its reasonings; the perfect exactitude of its results; their broad universality; their practical infallibility. It is easy to speak with precision upon a general theme. Only, one must commonly surrender all ambition to be certain. It is equally easy to be certain. One has only to be sufficiently vague. It is not so difficult to be pretty precise

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[69]Other examples can be found in Peirce's writings (e.g. CP1.141, 1897; CP4.237, 1902; EP2:236, 1903).

and fairly certain at once about a very narrow subject. But to reunite, like mathematics, perfect exactitude and practical infallibility with unrestricted universality, is remarkable. But it is not hard to see that all these characters of mathematics are inevitable consequences of its being the study of hypothetical truth. (CP4.237, 1902)

Here 'exactitude' is aligned with precision and set against vagueness, 'certainty' is aligned with 'practical infallibility', and 'universality' is set against having 'a very narrow subject'. For a proposition to be 'exact' is for it not to be vague. Since vagueness is a matter of degree, we should expect exactness also to be a matter of degree.[70] For Peirce, vagueness is a feature of signs which 'underdetermine' their objects—that is, signs which fail to determine whether some property does or does not apply to their object (EP2:350, 1905). If the further determination of the sign is not granted to the interpreter, then the sign is vague (EP2:351, 1905). For instance, if I say 'a prominent source in the military claims that there are plans for a coup', I hold back the right to determine who the 'prominent source' is. If, instead, I say that 'every academic wants more funding for their discipline', I leave to the interpreter the possibility of further determining the sign. For instance, by picking out some academic and applying the predicate to them. In so far as further determination is left to the interpreter the sign is general (EP2:350, 1905).[71] The resulting account of the vagueness of signs is then the combination of indeterminacy along with the denial of the right of further determination to the interpreter.

Less needs to be said to characterise 'certainty' and 'universality'. The latter pertains to the range of objects to which some proposition applies. A proposition of simple arithmetic like '2+2=4' applies to anything with the structure of the natural numbers. That is, mathematical propositions are particularly universal because they automatically apply to anything to which the iconic part of the proposition applies. For Peirce, all we are talking about in mathematics is the 'hypothetical state of things' represented in mathematical diagrams. If we restrict the indexical part of a proposition we end up with low universality. For instance, the claim 'tomorrow it will be cloudy in Sheffield' has a much more narrow application than '2+2=4'. 'Certainty', is simply the absolute reliability of some proposition with re-

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[70]This agrees with Peirce's use of 'exactitude' in some places. For instance, Peirce thinks there is an appropriate 'standard of certitude and exactitude' for our various inquiries (CP1.85, 1896). The impossibility of a high degree of certainty in our results within some subject gives us 'no reason for sulkily dismissing the subject' (CP1.86, 1896). Peirce would presumably say the same about subjects for which a high degree of precision is impossible as well.

[71]An account of the 'game theoretic' aspects of this account of generality and vagueness can be found in Pietarinen 2006b.

spect to future experience. No future experience will be able to shake the proposition. Peirce invokes the notion of 'practical infallibility' in the quotation given above, by which he means something like 'taken as certain for the control of future action'. Peirce takes, for instance, the dictates of conscience to be 'practically infallible' (e.g. CP1.248, 1902). The idea that experience cannot justify claims to certainty being made here is the same as the one that Misak derives from Peirce; we cannot know that a belief we have is indefeasible because we haven't had all of the experience yet!

Given these clarifications, there are two interpretations of the phrase 'exact truth' available. According to the first, an 'exactly true' proposition would be one that is both absolutely exact and absolutely certain. According to this view the proposition 'the slime mould is green' would not be 'exactly true' even if the slime mould is indeed green. One might replace it with the more exact proposition 'the slime mould reflects light with a wavelength between 500 and 520nm', but even this would not be 'exactly true'. We still do not know, for instance, exactly what wavelength the light it reflects is, or how it varies over time. That 'exact truth' is unattainable in this sense would follow from the denial of the possibility of exactitude being derived from experience. The second interpretation would be to take the 'exact truth' to mean that the proposition has, determinately, the property of being true. Taking true to be a vague predicate, this is not an acceptable interpretation, since we need to be able to say that propositions are 'true' without being 'exactly true'. However, we could take 'exactly true' in this sense to be equivalent to absolute certainty.

We have already seen that Peirce denies the capacity of experience to establish either absolute exactitude or absolute certainty. Consequently, I think it is best to avoid picking either of the above interpretations of 'exact truth' at the expense of the other. Rather, we can take 'exact truth' to be the conjunction of certainty and exactitude, and show why Peirce thinks neither can be established by experience.[72]

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[72]This is borne out by the following passage from Peirce:

> In the second place, there are those who hold that a theory which has sustained a number of experimental tests may be expected to sustain a number of other similar tests, and to have a general approximate truth, the justification of this being that this kind of inference must prove correct in the long run, as I explained in a previous lecture. But these logicians refuse to admit that we can ever have a right to conclude definitely that a hypothesis is *exactly true*, that is that it should be able to sustain experimental tests in endless series; for, they urge, no hypothesis can be subjected to an endless series of tests. They are willing we should say that a theory is true, because, all our ideas being more or less vague and approximate, what we mean by saying that a theory is true can only be that it is very near true. But they will not allow us to say that anything put forth as an anticipation of experience should assert exactitude, because exactitude in experience would imply experiences in endless series, which is impossible. (EP2:236, 1903, emphasis mine)

Peirce takes an experience to be 'a brutally produced conscious effect that contributes to a habit, self-controlled, yet so satisfying, on deliberation, as to be destructible by no positive exercise of internal vigour' (EP2:437, 1908). Restricting ourselves to cognitive habits (beliefs), this is just to say that an experience is something which compels you to think one way rather than another. Experience in general 'means nothing but just that of a cognitive nature which the history of our lives has forced upon us' (CP5.539, 1902). In the language of Peirce's categories, experience is primarily a matter of 'secondness', that is, our being *compelled* to think one way rather than another, and secondarily a matter of 'thirdness', since it is the compulsion to *think* one way rather than another. To say that some belief is certain, then, is to say that it will stand up to the course of experience come what may; there is no 'brutally produced conscious effect' which could in the long run destroy the belief in question.

The claim that the indexical reference of propositions depends on collateral experience should be understood to mean that it depends on the utterer and the interpreter sharing experience in the above sense. Both have been brought, independently of the particular sign the one is uttering and the other interpreting, by the course of experience to already have some beliefs about the object of the sign. Or, if not, the sign gives the interpreter enough by way of instructions to gain such experience. In Peirce's words:

> A proposition, then, has one predicate and any number of subjects. The subjects are either names of objects well known to the utterer and to the interpreter of the proposition (otherwise he could not interpret it) or they are virtually almost directions how to proceed to gain acquaintance with what is referred to. (CP5.542, 1902)

Experience cannot guarantee exactitude because the constraint it represents on our cognition is never enough to completely determine our beliefs about a given object. Peirce's argument can be most clearly made out if we start with his account of measurement and then generalise. One of Peirce's major scientific contributions was to the theory of errors in measurement.[73] A conclusion he drew from his work on experimental error is that no measurement is entirely definite; we are always

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Here, the application of 'exact truth' to a theory is taken to be the non-vague application of the term 'truth', which comes to what I have characterised as 'certainty' above. Consequently, we should get everything we need here by merely considering why Peirce thinks experience cannot establish either exactitude *or* certainty.

[73]One of his major preoccupations was determining and correcting the errors that occurred in pendulum measurements of gravity as a result of the pendulum apparatus flexing (e.g. W4:515–528, 1881).

left with some degree of error, which we may or may not be able to quantify.[74] If, for instance, I attempt to measure the length of time it takes for me to walk to the university using the timer on my watch, then my accuracy is limited to hundredths of a second. Supposing that I've measure my walk as taking 28 minutes, 32 seconds, and 83 hundredths of a second, my measurement leaves the number of thousandths of seconds my walk took indeterminate. While I could solve this problem by buying a more accurate stop watch, I would be left with a similar problem if I were to seek further accuracy. This is not the only source of inexactitude here, for the measurement doesn't take into account my reaction time when starting and stopping the watch, nor does it take into account errors which might arise from defects in my watch. The vagueness of particular measurements, like my timing of my daily walk to the university, is embedded in the vagueness of experience in general. For instance, the measurement assumes that there is a clear criterion for my having arrived at the university or left my flat. Do I time myself from the front door of the apartment, or from the door of the whole building? Similarly, have I arrived at university when I get onto the campus, into the building, or when I sit down at my desk? If even the application of our most definite concepts in the context of measurement is essentially vague, then it is right to say that any concept we apply in experience, or that is forced on us by experience, will be similarly vague.[75] For Peirce, 'absolute exactitude cannot be revealed by experience, and therefore every boundary of a figure which is to represent a possible experience ought to be blurred' (CP4.118, 1893).

Experience cannot guarantee certainty because the claim to certainty is a claim about *all* experience in an, at least potentially, never-ending series of experiences. We have no guarantee that an experience will not occur which requires us to upend our beliefs quite radically. The reader familiar with Peirce's rejection of both Cartesian radical doubt and Humean inductive scepticism may worry that I am misrepresenting Peirce here. In the former case, the only doubt that Peirce al-

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[74]Peirce's claims of this sort are often made in the context of his evolutionary cosmology. For instance:

> Try to verify any law of nature, and you will find that the more precise your observations, the more certain they will be to show irregular departures from the law. We are accustomed to ascribe there, and I do not say wrongly, to errors of observation; yet we cannot usually account for such errors in any antecedently probably way. Trace their causes back far enough, and you will be forced to admit they are always due to arbitrary determination, or chance. (W8:116–117/EP1:304–305, 1892)

[75]Recall Hookway's attempts to count the leaves on his tree earlier in this chapter (§2.2).

lows is doubt triggered by some particular experience or set of experiences. There is no justification here for an attempt at complete scepticism.

However, Peirce is not so wedded to common sense that he would not countenance the theoretical possibility of a need for major reform of our beliefs arising.[76] Similarly, this is not Humean inductive scepticism because it never leads to an endorsement of the claim that there is no reason to expect that the future resembles the past in some respect. At most, it allows for the rejection of the claim that the 'active general principles' which we take to govern reality are *different* from the way we thought them to be before. That there is no *a priori* guarantee that, say, the law of gravity will continue to hold as it has in the past is no reason to think that it won't continue to hold.

5.2.3   The Indefinite Qualification

Any 'ordinary proposition' thus presents itself with a qualification: it presents an indexical connection with experience that prevents it from being entirely exact or entirely certain.[77] It is an 'indefinite' qualification because we cannot even provide definite limits on the error involved. In the context of certain measurements we can get a fairly definite idea of the limits on our accuracy, but this is not true of experience in general, nor is it true of our understanding of our failure to fully live up to truth as an ideal of inquiry. Peirce makes this distinction while reflecting, after William James's death, on James's 'love of truth':

> After studying William James on the intellectual side for half a century—for I was not acquainted with him as a boy—I must testify that I believe him to be, and always to have been during my acquaintance with him, about as perfect a lover of truth as it is possible for a man to be; and I do not believe there is any definite limit to man's capacity for loving the truth. If you ask me what that ugly word 'about' signifies in my statement of James's love of truth, as I believe that love to have been, I reply that I conceive the imperfection of man's devotion to anything—at any rate to any such perfect ideal as Truth—to be very different from his incapacity to attain exactitude in reproducing a metre or a kilo, inasmuch as in these latter cases, what he is liable to do is to make his copy either too large or too small, with an equal liability—after making a constant allowance, one way or the other, for his tendency to make it a bit different from 'nature' (as the artists call the real thing they aim to imitate, at least to a certain difference, *près*)—I repeat, after [we have made] such allowances [for] an equal liability, to err in excess and in defect, in such a case we are just as likely, and

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[76]In a related context, Peirce says that 'it is of the essence of conservatism to refuse to push any practical principle to its extreme limits—including the principle of conservatism itself. We do not say that sentiment is never to be influenced by reason, nor that under no circumstances would we advocate radical reforms' (EP2:32, 1898).

[77]Recall the 'doctrine of the double object'.

> indeed a little likelier, to hit the truth as near as our last place of decimals goes, as we are to make a small error one way or the other. Indeed we are infinitesimally likelier to do so. But when it comes to efforts to attain an ideal that it would be an absurdity to talk of surpassing and an impossibility actually to reach, we ought to measure our shortcomings by the logarithms of [our] mechanical, blockhead, measures of those shortcomings. Exactly of what nature these 'blockhead measures' would be, it would be a study to ascertain; but all measurement of the errors that are only known through those erroneous measurements are pretty rough; and a slight error in the mode of measuring is very unlikely to be of serious consequence. (CP6.183, 1911)[78]

Here the kind of approximate certainty and exactitude that attaches to our attempts to measure the value of some quantity is distinguished from our attempts to live up to truth as an ideal for inquiry. While we can easily deal mathematically with our tendency to make errors in the case of 'reproducing a metre or kilo', we cannot so easily deal with the approximations we make to the ideal of 'truth'. Rather than the fairly definite qualifications available in the case of measurement, we can only provide an indefinite qualification of the extent to which our propositions are 'exactly true'. We have only 'mechanical, blockhead' measures of such failings. Peirce does not give any account of these 'blockhead measures' in this passage (or anywhere else that I am aware of), but whatever they are, we can take them to be quite crude. For instance, we might have some conception of the number of unsolved problems, or questions left to be studied in some particular field or hopes for the unification of the available theories. In the case of, say, plant biology we might have some vague but quantifiable sense of the number of species that remain unstudied. The kind of measure we might use if we zoom even further out to natural science in general, or to philosophy, are less clear. Whatever the measures are, we are to '[take] the logarithms' of them.[79] But it seems clear that the measure of our failure to live up to the ideals of certainty and exactitude are not definite measures. We cannot give exact bounds on our error in general, nor do the everyday propositions we utter provide them.

We are now in a position to see that the everyday use of the term 'true' is perfectly applicable to propositions that are not 'exactly true'. In so far as a proposition presents itself with an 'indefinite qualification', which it does in so far as it presents itself as depending on collateral experience, then this lack of both exactitude and certainty is no bar to its being true. For instance, the proposition 'all human beings are mortal' can be thought of as true without our being in a position to declare it

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[78]The material in square brackets is due to the editors of *Collected Papers*.

[79]In the context of measurement, taking the logarithm allows us to compress wide ranging measures to a smaller range. This may be what Peirce has in mind.

either absolutely exact or absolutely certain. On the one hand, the concept of 'human being' does not entirely determinately specify what objects we might pick out to test the claim. The proposition doesn't pretend to specify every possible strange case that might occur. For instance, according to some the prophet Elijah did not die, 'ascended in a whirlwind into heaven' with 'a chariot of fire and horses of fire' (2 Kings 2:11, NRSV). On Peirce's view, this would not falsify the claim that all human beings are mortal. The claim that all humans are mortal is vague, and in so far as it is vague, we can be more confident of its truth.[80] A truth grounded in experience cannot be 'exact', consequently if it presents itself as exact, it is false. Note also that while experience can not guarantee *certainty*, that does not prevent us from committing ourselves to the truth of a proposition *a la* Hookway's account. That is, we can take on a commitment to the continued success of a belief even if we are not *certain* that it will hold.

5.2.4 Propositions about the Absolute

So much for everyday truth, or the kind of truth attained on the basis of experience. We now turn to the notion of the absolute as a 'limit of experience' and the idea that the strictures that apply to everyday truth do not apply to propositions 'about the Absolute'. Peirce provides at least one explicit example of such a proposition. This proposition avoids the 'indefinite qualification' which must be attached to any proposition about the 'object[s] of ordinary knowledge'. In the context of an account of his evolutionary cosmology, Peirce presents one part of his cosmological project as follows: '. . . I only propose to explain the regularities of nature as consequences of the only uniformity, or general fact, there was in the chaos, namely, the general absence of any determinate law' (CP6.606, 1893). To this, Peirce attaches the footnote: 'Somebody may notice that I here admit a proposition as absolutely true. Undoubtedly; because it relates to the Absolute' (CP6.606fn2, 1893). In the same text, he characterises the Absolute as 'the A and the Ω' (CP6.607, 1893). It would seem that the claim being made here is one about the A: there was a general absence of determinate law in the beginning of things. The correct question to ask about this proposition is whether it would be 'exactly' or 'absolutely' true, were it

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[80]Recall the quote from above: 'It is [. . .] easy to be certain. One has only to be sufficiently vague' (CP2.437, 1902).

true. However, it is not immediately obvious this claim can be exact, certain, or exactly true.[81]

A better approach to determining Peirce's intent here comes by considering his alignment of the notion of the Absolute in metrical geometry and the notion of the absolute in philosophy. This also returns us to Peirce's account of measurement. Peirce's use of the term 'absolute' in geometry follows Cayley, who developed a way of introducing a measure on a space using a given conic section, this conic section was called 'the absolute' for that space.[82] Cayley's absolute provides a way of defining a notion of distance on a projective space. One feature of projective spaces is that parallel lines share a point at infinity (imagine standing on railway tracks on a flat surface and looking to the horizon: the two tracks seem to merge at a point on the horizon). A projective space does not, by itself, have a notion of distance between two points. While there is no privileged measure of the distance between two points in a projective space, we can determine for any two points, whether they are on the same line. Picking an 'absolute', that is, a privileged line in the space, allows one to define a metric on the space. In a two dimensional projective space there are three kinds of 'absolute' possible: an ellipse, a parabola, or a hyperbola. These are distinguished by two points which do not move if the absolute is moved. If the two points are real and coincide, then the space is elliptical; if the two points are real and distinct, then the space is parabolic; if the two points are imaginary and distinct, then the space is hyperbolic (CP6.27, 1898; CP6.582, 1905).

Peirce applies these geometrical ideas to the philosophical 'absolute' quite directly. On the 'elliptic' model the 'start' and 'end' states are not ideal or 'imaginary', rather, the '[m]ovement of nature recedes from no point, advances towards no point, has no definite tendency, but only flits from position to position' (CP6.582, 1905). A monistic materialism would answer to this description. The parabolic philosophy starts with a privileged ideal state and returns back to it. Hyperbolic philosophy, which Peirce favours, has a distinct ideal beginning and end: '[r]eason marches from premises to conclusion; nature has ideal end different from its origin' (CP6.582, 1905).[83] One of the claims that Peirce endorses as 'absolutely

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[81]Again, this is not an isolated claim. Consider: 'In short, I object to absolute universality, absolute exactitude, absolute necessity, being attributed to any proposition that does not deal with the A and the Ω, in the which I do not include any object of ordinary knowledge' (CP6.607, 1893).

[82]This terminology is no longer used in mathematics. The 'absolute' is now characterised as a kind of quadric, and the construction in general is called the Cayley-Klein metric.

[83]Shannon Dea offers a clear account of the three forms of the absolute that might be entertained in a Peircean philosophical cosmology (Dea 2015, pp. 725–725).

true',—that there was a 'general absence of determinate law',—is a claim about the imaginary 'beginning point' of the hyperbolic absolute.

There are problems for the picture that we have been developing here. These may explain why references to 'absolutely true' statements about the absolute seem to disappear in later Peircean texts. We find Peirce explicitly claiming, for instance, that the choice of the three possible forms of 'the Absolute' is itself to be made on the basis of experience. For instance:

> The Absolute in metaphysics fulfills the same function as the absolute in geometry. According as we suppose the infinitely distant beginning and end of the universe are distinct, identical, or nonexistent, we have three kinds of philosophy. What should determine our choice of these? Observed facts. These are all in favor of the first. (NM4:377, n. d.)

Moreover, the idea that Peircean cosmological claims could be 'absolutely true' seems to run against the idea that metaphysics should be thought of as abductive. Peirce himself tried to develop various tests by which the truth of his metaphysical picture could be discerned.

However, we have achieved something here. We can connect what we've seen about the Absolute, understood as the limit of inquiry, to our consideration of the aim of inquiry from the previous chapter. Just as the geometrical absolute (in a hyperbolic space) is unattainable, so is truth understood as an aim of inquiry. The mathematical metaphor in *Baldwin's Dictionary* and the comments about James's devotion to truth make this clear. In so far as inquiry is a matter of responding to experience,[84] then the results of inquiry can never achieve exactitude or certainty (or even universality). Yet it is an aim of inquiry to continue to improve the exactitude, certainty, and universality of our beliefs. This is neatly summarised by Peirce's claim that inquiry aims at beliefs which give us 'the maximum of expectation and the minimum of surprise' (R693, p. 166; cited in Hookway 1985, p. 67). To increase the universality and exactitude of our claims means our beliefs expose us more to surprise, while the minimisation of surprise is an increase in certainty. Peirce's later discussions of the Absolute tend to fall within a consideration of sign use in general, rather than 'experience' in particular. That is, we move towards a more general account of the aim of inquiry, understood in semeiotic terms. Accord-

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[84]This is true, whether the inquiry depends on 'special' forms of experience enabled by experimental apparatuses or on the kind of experience open to any 'scientific intelligence'. That is, it applies to both cenoscopy and idioscopy.

ing to this semeiotic account, we are to think of the limit of inquiry as a proposition which is not prescissively abstract.

5.3 The Absolute Truth as the Absence of Abstraction

5.3.1 'The "Truth," the fact that is not abstracted but complete . . .

The core texts which can be appealed to to support a notion of the absolute truth in terms of a lack of abstraction have already been deployed, at least in part (§5.1). We can now look at both in some additional detail. First, we consider Peirce's account, which culminates in a notion of the 'perfect Truth', of the three ways in which a proposition/dicisign can relate to 'the Truth':

> A *sign* is connected with the 'Truth,' i.e. the entire Universe of being, or, as some say, the Absolute, in three distinct ways. [. . .] Every sign that is sufficiently complete refers to sundry real objects. All these objects, even if we are talking of Hamlet's madness, are parts of one and the same Universe of being, the 'Truth.' But so far as the 'Truth' is merely the *object* of a sign, it is merely the Aristotelian *Matter* of it that is so. In addition however to denoting objects, every sign sufficiently complete *signifies characters*, or qualities. We have a direct knowledge of real objects in every experiential reaction, whether of *Perception* or *Exertion* (the one theoretical, the other practical). These are directly *hic et nunc*. But we extend the category, and speak of numberless real objects with which we are not in direct reaction. We have also direct knowledge of qualities in feeling, peripheral and visceral. But we extend this category to numberless characters of which we have no immediate consciousness. All these characters are elements of the 'Truth.' Every sign signifies the 'Truth.' But it is only the Aristotelian *Form* of the universe that it signifies. [. . .][85] But, in the third place, every sign is intended to determine a sign of the same object with the same signification or *meaning*. Any sign, *B*, which a sign, *A*, is fitted so to determine, without violation of its, *A*'s, purpose, that is, in accordance with the 'Truth,' even though it, *B*, denotes but a part of the objects of the sign, *A*, and signifies but a part of its, *A*'s, characters, I call an *interpretant* of *A*. What we call a 'fact' is something having the structure of a proposition, but supposed to be an element of the very universe itself. The purpose of every sign is to express 'fact,' and by being joined with other signs, to approach as nearly as possible to determining an interpretant which would be the *perfect Truth*, the absolute Truth, and as such (at least, we may use this language) would be the very Universe. Aristotle gropes for a conception of perfection, or *entelechy*, which he never succeeds in making clear. We may adopt the word to mean the very fact, that is, the ideal sign which should be quite perfect, and so identical,—in such identity as a sign may have,—with the very matter denoted united with the very form signified by it. The entelechy of the Universe of being, then, the Universe *qua* fact, will be that Universe in its aspect as a sign, the 'Truth' of being. The 'Truth,' the fact that is not abstracted but complete, is the ultimate interpretant of every sign. (EP2:303–304, 1904)

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[85]Peirce here offers a disavowal that he is engaged in metaphysics in his account of the proposition. This was quoted above.

The three connections between a sign and the Truth presented here are all included within Atkins's account of truth, but the third only partially. We see a connection by a kind of indexical relationship, which Peirce aligns with truth understood as the 'Aristotelian "Matter"' of the sign. We point to something in experience. That is, the sign must (in however mediated a fashion) connect us with some external object. This was the upshot of our discussion of 'collateral observation'. What distinguishes this kind of link from others is that it is characterised by a kind of 'here and now' compulsion. In another text which develops Peirce's interpretation of the Aristotelian form/matter/entelechy distinction, Peirce takes matter to be something of which 'we have direct experience in pushing against an obstacle in the dark, and in many other ways' (NM4:299, 1904).[86] One can come into a relation with 'the Truth' in this way by mere pointing. Such a sign, as we have seen, conveys no information about the thing pointed out.

The second connection between signs and the Truth is made sense of in terms of 'Aristotelian "Form"'. Here the connection is made in terms of some quality that is picked out in order to characterise an object. This is where real general qualities of the sort highlighted above by Atkins go.[87] We have 'direct knowledge of qualities in feeling, peripheral and visceral', but we are to take there to be many qualities out there 'of which we have no immediate consciousness'. In inquiry, we find that we must appeal to such qualities. They are the 'Form' of the 'Truth'.

The third connection, which Peirce aligns with the 'entelechy', is partially captured in the account of the dicisign that we have developed above. The 'entelechy' involves a connection between icon and index, or matter and form. It also involves connections between dicisigns/propositions. Propositions, like other signs, determine further signs of the same object. Atkins has this much, and also the connection between propositions and abstraction. But Peirce goes further and idealises the notion of the interpretant to imagine the 'ultimate interpretant' that sits at the end of the development of signs. This notion is characterised as the 'perfect Truth', which is, Peirce thinks, free from abstraction and thereby identical with the universe 'qua sign'. The connection with abstraction is made clear when Peirce says, as quoted earlier, that:

> A state of things is an abstract constituent part of reality, of such a nature that a proposition is needed to represent it. There is but one individual, or completely determinate, state of things, namely, the all of reality. A *fact* is so highly a prescissively

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[86]That is, we are discussing Peirce's category of Secondness.
[87]These general qualities are instances of Peirce's category 'Firstness'.

> abstract state of things, that it can be wholly represented in a simple proposition, and the term 'simple' here has no absolute meaning, but is merely a comparative expression. (EP2:378, 1906)

Prescissive abstraction, by nature, ignores certain features of things in order to attend to the others. The view that Peirce is expressing here seems to be that a complete picture of things would necessarily hold all true (in the everyday sense) propositions together. There would be nothing left out, and so there would be no prescissive abstraction. In Peirce's words, it would be 'the fact that is not abstracted, but complete' (EP2:304,1904). That is, the 'perfect Truth' is *identical* with the universe *qua* sign.

Here we can connect Peirce's conception of the absolute truth with views more popularly associated with the idealist F. H. Bradley. Bradley also held that the truth is somehow identical with reality and that truth understood in this way was marked by an absence of abstraction:

> The division of reality from knowledge and of knowledge from truth must in any form be abandoned. And the only way of exit from the maze is to accept the remaining alternative. Our one hope lies in taking courage to embrace the result that reality is not outside truth. The identity of truth knowledge and reality, whatever difficulty that may bring, must be taken as necessary and fundamental. (Bradley 1914, pp. 112–113)

The difference between Peirce and Bradley on this score is that Peirce adopts two related conceptions of truth: the contextualist and the absolute.[88]

Bradley's version of the 'identity theory',[89] like Peirce's, posits a tendency of thought towards incorporating more and more as it develops:

> Truth is the whole Universe realizing itself in one aspect. This way of realization is one-sided, and it is a way not in the end satisfying even its own demands but felt itself to be incomplete. On the other hand the completion of truth itself is seen to lead to an all-inclusive reality, which reality is not outside truth. For it is the whole Universe which, immanent throughout, realizes and seeks itself in truth. This is the end to which truth leads and points and without which it is not satisfied. And those aspects in which truth for itself is defective, are precisely those which make the difference between truth and reality. Here, I would urge, is the one road of exit from disastrous circles and from interminable dilemmas. For on the one side we have a difference

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[88]The story of the relationship between Peirce and Bradley on the notion of truth is particularly interesting given the already well discussed relationship between Bradley and James (e.g. Sprigge 1993). Understanding how Peirce's and Bradley's views fit together would add a great deal to our understanding of both the difference within the pragmatist tradition and of the relationship between pragmatism and the kind of views characteristic of British idealism. I hope to follow this path in the future.

[89]The term 'identity theory' was coined by Stewart Candlish (e.g. Candlish 1999). Some contemporary analytic philosophers have taken up the label in their work on truth, notably Hornsby 1997 and Dodd 2008.

> between truth and reality, while on the other side this difference only carries out truth. It consists in no more than that which truth seeks itself internally to be and to possess. (Bradley 1914, pp. 116–117)

In so far as there is a difference between truth and reality, on Bradley's view, it is just thought remains defective.

The question of abstraction is brought out most clearly by turning to the secondary literature on Bradley. William Mander points out that abstraction is built in to Bradley's account of judgement. For Bradley '[a]n idea or thought is an abstracted part or aspect of reality considered apart from its concrete existence, and judgement the act which refers this ideal content to a reality beyond that act' (Mander 1994, p. 141). Furthermore, on Bradley's account all judgements have conditional form in the sense that 'what they affirm is incomplete. [they] cannot be attributed to Reality, as such, and before[their] necessary complement is added' (Bradley 1893, p. 361; cited in Mander 1994, p. 141).[90] Mander glosses this by saying that, for Bradley, judgements have the form 'Reality is such that if $C_1 \ldots C_n$ then S is P', where $C_1 \ldots C_n$ refers to a series of background conditions, S to the subject of the judgement and P to the predicate (Mander 1994, p. 141).

The idea, which is the content of a judgement, is abstracted from reality. This content is general in so far as it can apply in more than one circumstance and to more than one object. For instance, we take the idea 'green' from the experience of, say, a forest in the summer. It is taken from its particular context, and is then able to be applied more broadly in other judgements. However, Bradley takes such abstractive moves to falsify the true situation. As Stewart Candlish puts it: 'we do not speak the truth if we say less than the situation we are talking about would justify our saying, just as we do not speak the truth if we say more' (Candlish 1989, p. 342). Reality, on the other hand, is not abstract.

Mander helpfully summarises the problems that arise for Bradley as a result of attempting to identify thought and reality with an account of thought as inherently general and abstract and an account of reality as inherently particular and concrete:

> Content [...] is wholly general, a kind or type found in many instances, unlike reality, which is particular. Bradley's way of putting this is to say that everything real has both existence and content, or, as he alternatively expresses it, 'that' and 'what' (Bradley 1893, p. 162). [...] In thinking or using ideas, we take some reality and abstract

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[90] I have changed Mander's reference changed to match the edition of *Appearance and Reality* that I cite elsewhere.

out its content, which we refer to some other part of reality. The problem is that the idea is merely an abstracted content, but reality—for instance, as it is given to us in feeling—is wholly individual and contains no abstractions, so it becomes hard to see how these abstractions can ever be true of, or identical with, the reality to which they are referred. As Bradley puts it, 'Ideas cannot qualify reality as reality is qualified immediately in feeling' (Bradley 1914, p. 231). (Mander 1994, pp. 32–33)

5.3.2 …is the ultimate interpretant of every sign.'

Bradley's notion of absolute truth, then, has a problem in its attempt to identify thought and reality. Peirce's, on the other hand, does not make abstraction essential for thought. The identity is between the 'final interpretant' which is thought of as a product of the development of signs, and the universe *qua* sign. The real, for Peirce, is understood as rationally structured, while for Bradley the real is ultimately unspeakable and grasped most adequately in mute, immediate, sensory experience. For thought to achieve its end would be, on Bradley's view, for thought to cease to be thought. Bradley calls this prospect the 'happy suicide' of thought Bradley 1893, p. 173. Peirce does not have to endorse this prospect.

In the long passage from 'New Elements', Peirce characterised the interpretant as 'any sign, B, which a sign, A, is fitted so to determine, without violation of its, A's, purpose, that is, in accordance with the "Truth," even though it, B, denotes but a part of the objects of the sign, A, and signifies but a part of its, A's, characters' (EP2:304, 1904). The objects of B are some part (or all of) the objects of A. This would suggest that we could never, in the process of interpretation, get beyond the objects of A. This is why Peirce adds that the 'purpose' of the signs in question is 'the Truth', and that signs must be 'joined with other signs' in order to achieve this purpose. The interpretant of A_1 and A_2 brought together might have the objects of either. The hope underlying this seems to be that whenever we have disparate bodies of knowledge, that we might find some perspective from which they are unified. It is taken as read, by Peirce, that the objects of (true) signs are all parts of one big object, 'the Truth'.

The 'ultimate interpretant', unlike the finite propositions that we entertain, need not be abstract. The form of abstraction that Peirce thinks characterises the kind of propositions a finite intelligence might utter is prescissive abstraction. Recall that this is the form of abstraction which takes some feature of experience and excludes everything else. We attend to one thing at the expense of others. Like the limit of experience, considered earlier, the limit of the development of abstracted propositions in inquiry can be thought of as not subject to the limitations that arise

from prescissive abstraction. That is, the limit of a series of abstract propositions need not be itself abstract. Peirce offers an illustration of this picture within the following passage:

> I have not explained, however, why I call the sign the Entelechy, or perfectionment, of reality. [...] We have seen that a law is a sign. Take away from nature all conformity to law, all regularity and what have we? A chaos? No matter would possess any property, nor even an accident for any duration however short. Indeed there would be no time. Form and Matter would be almost disunited. Properly speaking there would be no reality at all. The true and perfect reality, the very thing, is the thing as it might be truly represented, as it would be truly represented were thought carried to its last perfection. As a perissid curve passing further and further toward the positive side traversed infinity and appears coming nearer and nearer from the negative side, so thought passing always from object to interpretation at its extremest point reaches the absolute reality of objectivity. The real and true thing is the thing as it might be known to be. (NM4:300, c. 1904)

This meets head on the worry that the true understanding of the object ('the Truth') is the interpretant furthest away from the object. Peirce likens the development of signs to a 'perissid curve'. This is Peirce's own topological terminology. What he has in mind here is something like a Möbius strip. If travelling along a Möbius strip you would, going forward, find yourself exactly where you started. On Peirce's model the process of interpretation has to '[traverse] infinity', the absolute truth is an ideal point of course, but regardless, the process ends up with the object that it started with.

The 'ultimate interpretant' is said by Peirce to be identical with the 'Universe *qua* fact [...] the Universe in its aspect as a sign'. This end point then, unlike the Bradleyan absolute, is the same kind of thing as thought. For Peirce, all thought is in the form of signs, and 'the Truth' is no different even if not abstract. This is a key difference between Peirce and Bradley. For Bradley, thought and reality remain distinct, since thought is essentially abstract. Peirce does not make this move. The identity he sets out is between the world as rationally structured and thought. There may be features of the universe that are not to be understood in terms of signs, but they are, by hypothesis not something that could be incorporated into 'the Truth'. Recall Candlish's maxim that 'we do not speak the truth if we say less than the situation we are talking about would justify our saying, just as we do not speak the truth if we say more' (Candlish 1989, p. 342). This is not violated by the thought that the Universe might contain something not of the nature of a 'sign'. Those features, since irrational, do not justify us in saying anything.

5.4 The Resultant View

At the other end of this deep dive in to Peirce's semeiotics, what have we achieved? Our aim was to develop an account of Peirce as offering two closely related conceptions of truth: one 'contextualist' and the other 'absolutist'. Both can be understood in terms of Peirce's account of the 'dicisign'. The contextualist notion *a la* Misak, Hookway, and, more recently, Atkins, can be made sense of in terms of the account offered earlier in this chapter (§5.1). Within a given context of inquiry or action, our attention will be determined by various ends. The indefeasibility account of truth developed by Hookway and Misak works perfectly well in such contexts. This is our account of the truth of an 'abstract proposition, such as a person might utter', to borrow the terms used in *Baldwin's Dictionary*. We've added to this the idea that 'local truths', while perfectly fine in a given context, leave unfinished business. They are not the last word. Were they to declare themselves the last word, they would fail to be true: '[truth] essentially depends on that proposition's not professing to be exactly true'. All judgements made on the basis of experience are such that they can be rendered more precise, more certain. They also leave unstated their connection with other judgements. This last idea is capture by the idea of the absolute truth as the limit of the development of signs.

By tracing out Peirce's account of the absolute as a 'limit of experience', the connection between experience and indexical reference iconically displayed by dicisigns, and the idea of the ultimate interpretant, we've gained an understanding of the notion of absolute truth. The absolute truth is not, on Peirce's view, a proposition 'such as a person might utter'. We saw that even in the Baldwin's Dictionary article's mathematical metaphor, the absolute truth 'π' does not appear in the series of utterable propositions of which it is the limit. As Peirce said when discussing James's love of truth, truth is 'an ideal that it would be an absurdity to talk of surpassing and an impossibility actually to reach'. We saw, when we turned to the absolute understood as ultimate interpretant, that we can think of the absolute as the limit of all sign use (or at least, the limit of theoretical inquiry).[91] In so doing we see that there is only one absolute truth: the proposition, which unlike those propositions we utter in various local circumstances, is 'not abstrac-

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[91]A reason not to restrict our account to theoretical inquiry, or inquiry full stop, is that our action changes the world - and thus changes what 'the Absolute', or 'entelechy', is. As Peirce puts it in 'New Elements':

> Of the two great tasks of humanity, *Theory* and *Practice*, the former sets out from a sign of a real object with which it is *acquainted*, passing from this, as its *matter*, to successive interpretants embodying more and more fully its *form*, wishing ultimately to reach a direct *perception* of the entelechy; while the latter, setting out from a sign signifying a character of which it *has an idea*, passes from this, as its *form*, to successive interpretants realizing more and more precisely its *matter*, hoping ultimately to be able to make a direct *effort*, producing the entelechy. (EP2:304, 1904)

ted but complete'. On Peirce's view, we should not think that there could be more than one such truth. To think of there as being two would be to say that inquiry could develop in two entirely incommensurable ways, while studying the same object. This would be to undermine the hope for the possibility of rational agreement between inquirers on any questions which we might ask. This is, as we saw earlier, a regulative hope for inquiry.

Before continuing, it is worth pausing over some of the problems raised above for the notion of the 'end of inquiry'. One of the core problems, shared by both Wright and Russell, is that the idea that some proposition would be believed in a 'complete state of information' is uninformative for anyone who wants to understand what truth means. However, this misconstrues the function of the notion of the absolute truth as defended in this chapter. The absolute truth is, in one respect, the perfect theory. But, as a result of Peirce's identity theory, it is also the reality that we are inquiring into. So, on the view defended here, the way to determine whether some abstract proposition is true, is to perform exactly the kind of tests highlighted in Misak's account of truth as indefeasibility. These tests will depend on the local norms of the relevant form of inquiry. These will vary as we investigate the truth of, say, 'Bertrand Russell had toast for breakfast on the 20th of March, 1939', or 'murder is wrong', or 'the gravitational force between two objects is inversely proportional to the square of their distance'. Since the absolute truth *is* reality (in so far as it is intelligible), then there is a respect in which attending, by abstraction, to some relevant proposition is determining whether it obtains in the 'final theory'. Or, in other words, the absolute truth is not just some theory held by imagined future inquirers, it is *also* the reality that we interact with in our present inquiries.

Wright held that the 'end of inquiry' is a state of complete information and that such a state is conceptually incoherent. No one can know that they are in a state of complete information, so that supposedly complete state in fact leaves out the truth of the proposition 'this is a complete state of information'. This does not cause major problems for the proposal defended here. For one thing, the main use that Wright put this idea to was in order to show that the notion of complete information can't provide an informative criterion for the truth of abstract propositions. Moreover, Peirce conceives of the absolute truth as something unobtainable in a way that defuses Wright's worry. For Peirce, any judgement made on the basis of experience is subject to further development. For that reason, we cannot imagine a possible

inquirer being in possession of the absolute truth. Any situation in which there continue to be inquirers, is a situation in which the 'aim of inquiry', the absolute truth, has not been obtained.

Finally, we introduced worries from Russell about both buried secrets and first-person authority. Russell expressed scepticism that any possible future inquirer could be in a better position than him to judge what he had for breakfast that morning. I noted above that propositions about what Russell had for breakfast on various dates will be studied by whatever local means are appropriate to their investigation. In this case, the methods of historical research. We can, then, help ourselves to Misak's answer to the problem of buried secrets, set out above. If we *were* to sufficiently investigate, then we would determine that Russell had toast. This is not made false by the fact that it seems we cannot investigate sufficiently. If Russell had been kind enough to tell us what he had for breakfast on the relevant day, then this would affect whether we could investigate the question sufficiently. In fact, Russell would, by virtue of a kind of first person authority, be responsible for setting up an indefeasible belief about the matter (assuming that he was not himself wrong about what he had for breakfast).[92] The only situation in which a future inquirer could contradict Russell on the matter is if they possessed concrete evidence that both explained why Russell's testimony was to be ignored, and presented a convincing alternative scenario. This, however, is just as it would be on any understanding of truth.

6   Pragmatism and the Absolute

The contemporary pragmatist reader of this chapter may be experiencing vertigo. We have moved very quickly from views broadly within contemporary analytic philosophy to views in the ballpark of the kind of idealism that both early analytic philosophy and much of the pragmatist tradition have defined themselves against. The idealist philosopher Josiah Royce coined the term 'Absolute Pragmatism' to refer to the kind of pragmatism that both he and Peirce endorsed. This chapter has largely focused on the 'Absolute' side of this label, but it is worth considering

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[92]It's worth emphasising that Russell would be responsible for this belief by virtue of the authority of testimony in this kind of research. However, this authority is grounded in the fact that testimony is, in many cases, our best access to past events. The fact that we come to have an indefeasible belief about Russell's breakfast is due to Russell's testimony, but the belief is not indefeasible just because Russell said so. This will become more clear when we discuss Peirce's account of reality ascriptions in the next chapter.

the pragmatist side in a little more detail. As in the previous chapter, it will be helpful to begin by contrasting Peirce's pragmatism with Huw Price's account of truth. This account of truth is the result of the kind of 'linguistic anthropology' outlined in the previous chapter. As such, Peirce will challenge it on the grounds outlined there. But there are further things to be said about the particular story Price tells about truth.

6.1   Price on Truth as a Norm of Assertion

Price develops his account of truth in 'Truth as Convenient Friction' as a 'more realist' alternative to the views on truth defended by other pragmatists in the analytic tradition. In particular, Price wants to distinguish his view from the kind of post-Deweyan account defended most famously by Richard Rorty which eschew truth in favour of something like 'warranted assertibility' (Price 2011, p. 163). Rorty claimed that there is no practical difference to be discerned between a linguistic community with a norm that asserters justify their assertions and one in which truth is a norm for assertion over and above justification. According to Price this is an empirical claim, and that were the experiment to be run we would find evidence of 'an important and widespread behavioral pattern that depends on the fact that speakers do take themselves to be subject to such an additional norm' (Price 2011, p. 164).[93]

Price's conception of 'linguistic anthropology' was introduced in the previous chapter. His account of truth is an instance of this strategy. As Price says, his account of truth 'explicates truth in terms of its role in practice' (Price 2011, p. 167). It is to do this, moreover, using only the resources of biology and anthropology.[94] For Price, truth functions in our practice as 'a norm which speakers immediately assume to be breached by someone with whom they disagree, *independently of any diagnosis of the source of the disagreement*' (Price 2011, p. 164). This norm 'gives disagreement its immediate normative character', and thereby enables dialogue rather than 'a chatter of disengaged monologues' (Price 2011, pp. 164; 166).

Price sets out his account of the truth norm in negative terms:

> Truth: If Not-P, then it is incorrect to assert that P; if Not-P, there are prima facie grounds for censure of an assertion that P. (Price 2011, p. 170)

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[93]The centrality of this norm for human behaviour leads Price to say that actually running the experiment in question would be unethical (Price 2011, p. 164).

[94]This is not explicit in 'Truth as Convenient Friction', but Price cites his account of truth as an example of his kind of linguistic anthropology in later work (e.g. Price 2013, p. 37).

Note the normative concept 'censure', here. This norm could be added to the practice of 'merely opinionated asserters' ('Mo'ans'), those who only have the norms of sincerity and justification in their linguistic practice, in the following terms:

> The practice the Mo'ans need to adopt is simply that whenever they are prepared to assert (in the old MOA sense) that P, they also be prepared to ascribe fault to anyone who asserts Not-P, independently of any grounds for thinking that that person fails one of the first two norms of assertibility. Perhaps they also need to be prepared to commend anyone who asserts that P, or perhaps failure-to-find-fault is motivation enough in this case. At any rate, what matters is that disagreement itself be treated as grounds for disapproval, as grounds for thinking that one's interlocutor has fallen short of some normative standard. (Price 2011, p. 173)

If justification is the strongest norm of assertion, disagreement doesn't necessarily get off the ground. I can easily be justified in believing P, while you are also justified in believing not-P.

However, this story only works in that there is already reason to be worried about the disapproval of others. Price notes that we couldn't add the truth norm to a language that lacked it merely by adding the predicate 'true' to the language. Rather:

> Insofar—so very far, in my view—as terms such as 'true' and 'false' carry this normative force in natural languages, they must be giving voice to something more basic: a fundamental practice of expressions of attitudes of approval and disapproval, in response to perceptions of agreement and disagreement between expressed commitments. (Price 2011, p. 174)

There is some prior feature of humans that makes disagreements matter, at least in certain cases. Here we might add some of Price's later gestures in the direction of a general account of the function of assertoric language. Price entertains the thought that the general function of such language is to 'enable social creatures to express, revise and align behavioural commitments of various kinds' (Price 2011, p. 154). The benefits or costs of such a conceptual technology are revealed to us by the natural sciences.[95] Perhaps an evolutionary story about the need for co-operation in certain environments, or perhaps a more social scientific explanation. Regardless, Price takes this disapproval to have a 'causal, carrot-and-stick role in encouraging [speakers] to settle their differences, in cases in which initially they

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[95]Price takes it that there are good prospects that the truth norm provides the 'long-run advantages of pooled cognitive resources, agreement on shared projects, and so on' (Price 2011, p. 177). But, he also leaves it open that 'biologically considered' the possession of the truth norm and of dialogue turn out to not be advantageous to us (Price 2011, p. 176).

disagree' (Price 2011, p. 175). Ultimately, he takes it to likely depend on 'a primitive incompatibility between certain behavioral commitments of a single individual, which turns on the impossibility of both doing and not doing any given action A— both having and not having a cup of coffee, for example' (Price 2011, pp. 175–176). And that '[a]ll else—both the public perceived incompatibility of "conflicting" assertions by different speakers, and the private perceived incompatibility essential to reasoning-is by convention, and depends on the third norm' (Price 2011, p. 176).[96]

In 'Truth as Convenient Friction', Price also offers a series of arguments against what he takes to be the Peircean account of truth. It is worth briefly considering these before moving on to a Peircean response to Price. The first thing to note is that Price takes Peirce to be offering a reductive analysis of truth, he is attempting to 'identify' truth with something else (Price 2011, p. 170). Price takes this to be the (classical) pragmatists '*ur*-urge' (Price 2011, p. 182). However, we have seen reason to think that this is not the case for the contextualist pragmatist elucidation of truth. We are not looking, when attempting to provide a pragmatist elucidation of truth, to produce a list of necessary and sufficient conditions or a reductive analysis (c.f. Heney 2015, pp. 510–511). The notion of absolute truth, on the other hand, is supposed to give voice to a norm of inquiry, and, in any case the truth of any proposition that we might entertain is not determined by identity with the absolute truth. We do not identify abstract propositions with the absolute truth at any part of the story. This means that the truth of abstract propositions is not given a reductive analysis in terms of the notion of the absolute truth.

Price makes two further objections that are worth considering. He notes that 'it is very unclear what the notion of the ideal limit might amount to, or even that it is coherent. For example, couldn't actual practice be improved or idealized in several dimensions, not necessarily consistent with one another?' (Price 2011, p. 178). Peirce need not deny that this is possible. We saw that Peirce entertains the thought that there may not be truths to be had concerning each question we ask. As Peirce provocatively puts it, it may be that the world is not entirely real

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[96]Heney notes that the explanations for our assertoric practices that Price offers all appeal to features of ourselves, rather than to 'the forcefulness of experience' (Heney 2015, p. 512). She suggests that the Peircean ought to adopt the regulative assumption that our beliefs and assertions can be appropriately responsive to this 'forcefulness'. In assertion we are not just answerable to ourselves or to one another (Heney 2015, pp. 412–413). We will turn to what is required by this regulative assumption in the next chapter.

(NM4:343–344, 1898).[97] The notion of the absolute truth is an ideal which regulates the practice of inquiry. Moreover, the ideal is not sunk by the thought that there are many dimensions along which our present practices might improve, and that some of these might be incompatible. This might be true in some particular sphere of inquiry, but that does not prevent additional 'meta-inquiry' into what we would have discovered had we taken another path. The results of both could be encompassed within the absolute truth.

Price, following Putnam, also thinks that there is a 'naturalistic fallacy' involved in the notion of the 'end of inquiry':

> Truth is essentially a normative notion. Its role in making disagreements matter depends on its immediate motivational character. Why should ideal warranted assertibility have this character? If someone tells me that my beliefs are not those of our infinitely refined future inquirers, why should that bother me? My manners are not those of the palace, but so what? In other words, it is hard to see how such an identification could generate the immediate normativity of truth. (It seems more plausible that we begin with truth and define the notion of the ideal limit in terms of it: what makes the limit ideal is that [it] reaches truth. This doesn't tell us how and why we get into this particular normative circle in the first place). (Price 2011, pp. 178–179)

Again, this issue seems to arise from a mistaken attitude to Peirce's strategy. We're not attempting to find some non-normative thing (a proposition being accepted at some particular time) to identify truth with. But, were I to be told what the end result of some particular practice that I am committed to is, I would not think of this in the way that Price thinks of the 'manners of the palace'. Future inquirers are not simply a different bunch of people, they are fellow-inquirers with whom I should feel a certain amount of solidarity (even if 'infinitely refined'). I should certainly be interested to know what the settled view of future inquirers might be regarding a given question.

6.2 Pragmatist Naturalism or Pragmatist Idealism?

Peirce's account of truth, like the rest of his philosophy, does not depend on the idioscopic sciences in the same way that Price's does. Instead, Peirce attempts to think through the appropriate ideals for practice, and especially the practice of thought, from the cenoscopic perspective. Granting Price the label 'naturalist',[98] we can call Peirce's account an 'idealist' one. Rather than starting with the resources granted

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[97]We'll consider this claim in the next chapter.

[98]With the same caveat we gave it earlier: there are many reasonable meanings we can attach to the word 'naturalism' according to which Peirce is a naturalist.

by biology or anthropology for making sense of our assertoric practices, we can start with cenoscopy. Recall, in addition, that this is a perspective from *within* the practice of inquiry, rather than the third-person perspective of the linguistic anthropologist. We are especially interested here in Peirce's 'normative sciences', and what they say about the *ideals* for conduct and thought. This is a kind of 'pragmatist idealism'.[99]

The absolute truth is the notion that we get when we imagine what complete rational self-control would look like. We should not be satisfied, thinks Peirce, with merely local stability in our beliefs. If we want to attain rational self-control we ought to put strain on our present beliefs as much as possible. This is, in part, got at with the idea of a limit of experience. The drive towards a unified story about the world is likewise got out of the notion of rational self-control. If we have two well-functioning theories, or a series of distinct disciplines, we should be driven to at least attempt to find a story that either makes sense of why we end up with the various theories or disciplines, or a story which unifies what was previously disparate. That is, the absolute truth is the ideal of an explanation that encompasses everything.

We can also point to a potential failure of 'rational self-control' in Price's conception of his account of truth. We have seen that Price lets his story about truth rest on a pre-existing sense of disapproval and approval. Price suggests we might think of this as a feature of humans as social animals or grounded in the practical inability of a human to perform an action and its contrary. This is similar to some features of Peirce's arguments in 'How to Make our Ideas Clear' and in 'Fixation of Belief'. There, Peirce makes his story about truth depend on a desire for stable habits of action.[100] Peirce later rejected this strategy:

> The conception of truth according to me was developed out of an original impulse to act consistently, to have a definite intention. But in the first place, this was not very clearly made out, and in the second place, I do not think it satisfactory to reduce such fundamental things to facts of psychology. For man could alter his nature, or his environment would alter it if he did not voluntarily do so, if the impulse were not what was advantageous or fitting. Why has evolution made man's mind to be so constructed? That is the question we must nowadays ask, and all attempts to ground

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[99]We also need to add the caveat that 'idealism' is a term just as hard to pin down as 'naturalism'. There will be many senses in which Peirce will not count as an idealist.

[100]This could be cashed out in terms of Price's suggestion that his story about truth could be grounded in the practical inability to perform act A and also to not perform it. A stable habit of action, for Peirce, is one that does not leave us in a position of not knowing what action to perform. To be in the situation that Price suggests, of feeling the impossibility of acting in two distinct ways, is to not have a settled habit in Peirce's sense.

the fundamentals of logic on psychology are seen to be essentially shallow. (EP2:140, 1903)

We can hope, Peirce thinks, for an explanation of why thought takes the form it does that does not depend on contingent facts about us. It is in this sense that we can agree with Russell that Peirce's story about truth relies on a conception of the 'perfectibility of man'.

Conclusion

We have covered a lot of ground in this chapter. We began with recent work on Peirce's account of truth in the analytic tradition. This discussion presented Misak and Hookway as showing that Peirce does not make the truth identical with the 'end of inquiry'. He is, instead, looking for a pragmatic elucidation of the concept as it functions in our practices of inquiry and assertion. For both, we end up with an account of truth in terms of the indefeasibility of beliefs in a given context. We then turned to Peirce's discussions of truth as a 'limit' in his entry for Baldwin's dictionary. I suggested an interpretation of Peirce's account of truth according to which there is a distinct, but related, account of truth for 'propositions such as we might utter', and the 'exact truth'.

In order to develop this account, I turned to recent work on Peirce's account of the proposition from Stjernfelt and Atkins. On the conception developed here, we are to think of the proposition, or 'dicisign', as consisting of an icon part and an index part. We saw that the proposition depends, for its indexical reference, on collateral experience. This allowed us to consider Peirce's account of the absolute as a limit of experience. We then turned to Peirce's account of the absolute as the limit of sign use, the 'ultimate interpretant'. This introduced the idea that the absolute truth is, unlike other propositions, not abstract. I compared this view to the slightly more well-known identity theory of F. H. Bradley. There is, on both Bradley and Peirce's view, one absolute truth and it is, in some respect, identical with reality.

Finally, we considered how Peirce's account of truth differs from that developed more recently by Price. This provided us with a specific case to see how the differences between Price's naturalism and Peirce's cenoscopic orientation lead to differences in their accounts of various concepts of philosophical interest. It also

highlighted the role of Peirce's 'absolute truth' in articulating the ideals that he takes to be operative in theoretical inquiry.

Peirce's accounts of the absolute truth in 'New Elements' and in later work shows that it is very hard to disentangle the metaphysical superstructure of the notion of absolute truth from the normative-pragmatic account of inquiry that generates it. We now turn to an account of Peircean metaphysics that will help to clarify the division of labour between metaphysics and logic.

Chapter 4

Peirce's Abductive Metaphysics

Introduction

This chapter begins by considering Peirce's characterisation of metaphysics in terms of the hierarchy of the sciences. According to Peirce, idioscopy depends on metaphysics and metaphysics, in turn, depends on the other parts of cenoscopy and on mathematics. In this chapter, we pay particular attention to the way in which Peirce takes metaphysics to depend on logic. Emphasis on the relationship between logic and metaphysics tends to encourage the view that Peirce's metaphysics is a kind of *a priori* study of the necessary structures of reality. This is often taken to be incompatible with pragmatism. On the other hand, emphasis on the relationship between idioscopy and metaphysics encourages the view that metaphysics is simply a very general kind of science. In this chapter I argue that both orientations can be held together by emphasising the fact that metaphysics is a kind of cenoscopy (§1). The kind of necessity associated with metaphysics is the kind that can be generated by cenoscopy. If the arguments made at the end of Chapter Two hold, then this will be enough to show that Peirce's metaphysics is consistent with his pragmatism.

Metaphysics is, like cenoscopy in general, concerned with the conditions for successful abductive reasoning. Metaphysics, as the 'completing department of cenoscopy' adds to the account of inquiry developed in logic, a conception of the general structure of any reality that could be the object of successful inquiry. Peircean metaphysics, then, develops 'a *Weltanschauung*, or conception of the universe, as a basis for the special sciences' (EP2:146–147, 1903). I argue that this picture of reality should be understood in terms of the way it structures the hypotheses we

allow ourselves to consider. On Peirce's view, all forms of inquiry assume a metaphysics of this sort; the only question is whether it is conscious and criticised or unconscious and uncriticised. In this connection, I point to Peirce's 'realist conception of reality ascriptions' and the role of Peirce's metaphysics in solving problems given to it by various forms of idioscopy.

Metaphysics is also associated with abduction in so far as it itself depends on abductive reasoning. On Peirce's view all forms of inquiry depend on all three forms of argument: abduction, induction, and deduction. However, we can still hold that metaphysics is a *primarily* abductive discipline. Peirce is explicit that metaphysics should not be understood as, like mathematics, primarily deductive; or like the special sciences, primarily inductive. I highlight the first hypothetical inference in Peirce's metaphysics: the hypothesis that there is an intelligible reality. This hypothesis is tested, albeit indirectly, by every attempt to inquire into anything. Other hypotheses in Peircean metaphysics affect first-order idioscopic inquiry, while being similarly removed from direct test. I argue that what unifies the hypotheses developed in Peirce's metaphysics is that they are concerned with explaining the possibility of successful inquiry (§2).

This basic pattern for moving from logic to metaphysics will take different forms depending on our conception of what the success of inquiry looks like. In Chapter Three we considered two variants of the Peircean account of truth. I follow the same approach in this chapter, discussing the kind of Peircean metaphysics that we get if we stick with the contextualist notion of truth, and the kind that we get when we add the 'absolutist' conception of truth as well (§3). My discussion of the first variety of Peircean metaphysics follows Hookway's interpretation, according to which we offer different explanations for our convergence on certain kinds of successful belief or practice. This version of Peircean metaphysics depends on our attitudes concerning the kind of success that is feasible in various local contexts. Hookway entertains the thought that a Peircean might end up with something like a Blackburn-style quasi-realism, according to which there are different explanations for the truth of, say, moral and scientific beliefs.

If we adopt, in addition, the absolute conception of truth we will attempt to produce a picture of the world according to which convergence with respect to any meaningful question is possible. This approach will not be satisfied with merely contextual explanations of convergence. This has two advantages as an interpretation of Peirce's position. The ideal of truth that is captured with the notion of

absolute truth is one which can be adopted by any possible inquirer. That is, it is the notion of truth that fits naturally with the idea that philosophy is cenoscopy. Second, it enables us to more fully make sense of the idealist features of Peirce's metaphysics by reading features of the process of inquiry, as a hypothesis, on to reality. I argue this by pointing to the methodological role for Peirce's realist conception of reality ascriptions.

1   Metaphysics in the Hierarchy of the Sciences

In Chapter One, I introduced Beverley Kent's claim that the hierarchy of the sciences is a diagram of the pragmatic effects of the various classified sciences on one another. Pick a science, and the hierarchy should provide a pragmatic clarification of its meaning. Kent follows Peirce in attending primarily to the status of logic with respect to the other sciences. In this chapter we will use the same method to understand metaphysics.[1]

When characterising metaphysics, Peirce often places it with respect to the other sciences. For instance, he holds that:

> *Metaphysics* is the proper designation for the third and completing department of cenoscopy, which in places welds itself into idioscopy, or special science. Its business is to study the most general features of reality and real objects. (EP2:375, 1906)

Metaphysics is, on this characterisation, the bridge between the special sciences and the rest of philosophy. It completes philosophy and connects it to idioscopy. To make sense of this, we will need to understand how metaphysics 'completes' cenoscopy, what it takes from the other cenoscopic sciences (§1.1), and in what sense it 'welds itself into idioscopy' (§1.2). We must also understand why the science that sits at this point in the hierarchy should be characterised as studying 'the most general features of reality and real objects'. In particular, we will need to consider what Peirce means by ascribing reality to something and to see what kind of generality is being aimed at (§1.3).

It is convenient to unpack these features of Peircean metaphysics by first considering two issues: those which concern the relationship between metaphysics and the rest of philosophy, and those which concern the relationship between metaphysics and idioscopy. It turns out that the two directions in which we can read the hierarchy, 'up' from idioscopy to metaphysics, and 'down' from mathematics

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[1]A similar strategy has been followed by other commentators (e.g. Parker 1998, pp. 54–55).

through cenoscopy, result in quite different accounts of metaphysics. Peirce's readers have often fallen on one side or the other. In this chapter I attempt to provide an account of Peircean metaphysics that incorporates both orientations. I do this by focusing on the role of metaphysics is providing an explanation for the possibility of successful inquiry. This is to continue the thought, introduced in Chapter Two, that cenoscopy is motivated by the need to account for the role of abduction in inquiry.

It will be helpful to have a sense of the kind of questions that Peirce takes metaphysics to ask. Thankfully Peirce provides a list of sample questions soon after the characterisation of metaphysics that I have just quoted:

> Whether or no there be any real indefiniteness, or real possibility and impossibility? Whether or not there is any definite indeterminacy? Whether there be any strictly individual existence? Whether there is any distinction, other than one of more and less, between fact and fancy? Or between the external and the internal worlds? What general explanation or account can be given of the different qualities of feeling and their apparent connection with determinations of mass, space, and time? Do all possible qualities of sensation, including of course a much vaster variety of which we have no experience than of those which we know, form one continuous system, as colors seem to do? What external reality do the qualities of sense represent, in general? Is Time a real thing, and if not, what is the nature of the reality that it represents? How about Space, in these regards? How far, and in what respects, is Time external, or does it have immediate contents that are external? Are Time and Space continuous? What numerically are the Chorisy, Cyclosy, Periphraxy, and Apeiry of Space? Has Time, or has Space, any limit or node? Is hylozoism an opinion, actual or conceivable, rather than a senseless vocable; and if so, what is, or would be, that opinion? What is consciousnesss or mind like; meaning, is it a single continuum like Time and Space, which is for different purposes variously broken up by that which it contains; or is it composed of solid atoms, or is it more like a fluid? Has Truth, in Kantian phrase, any "material" characteristics in general, by which it can with any degree of probability be recognized? Is there, for example, any general tendency in the course of events, any progress in one direction on the whole? (EP2:375, 1906)

We will refer back to these questions as we proceed.

1.1   The Completing Department of Cenoscopy

Peirce takes metaphysics to be the 'completing department' of cenoscopy. This suggests that there is something still to be done once we are finished with phenomenology and the normative sciences. In this section we consider both what remains to be done and what metaphysics takes by way of 'principles' from cenoscopy.

We have seen already that Peirce takes philosophy to be cenoscopy, the observational science of the commonly available. The positive argument for taking philosophy to be cenoscopy, presented in Chapter Two, turns on the necessity of

abductive inference in inquiry. Abductive inference is understood as a kind of 'internal observation'. In order to understand inquiry, then, we need an account of the inquirer. Moreover, this account of the inquirer must be such that some truth, understood as independent of any particular group of inquirers, might be attainable. An account of the inquirer that satisfied both of these demands would be one whose results would apply to any possible inquirer.

So far we are only left with the need for an account of the inquirer. However, such an account would not complete the task of cenoscopy. Cenoscopy is the science of that which can be derived from the kind of experience that is available to any possible inquirer. Metaphysics, on Peirce's story, does not rely on special experience and so is a form of cenoscopy. However, it is not itself an account *of inquiry or the inquirer*. Metaphysics is the discipline which takes the account of inquiry and the inquirer developed in phenomenology and the normative sciences, and develops a general picture of the world according to which inquiry might be successful.[2] The principles that metaphysics takes from the other departments of cenoscopy provide an account of the success conditions for inquiry that can be used for this task. By bridging the gap between the account of the inquirer, and the special sciences, metaphysics completes cenoscopy.

Just before Peirce offers his characterisation of metaphysics in terms of 'completing cenoscopy', he provides a compact statement of the function of cenoscopy. According to Peirce '*[t]he business of cenoscopy* is to construct, as best one may, a true comprehension of the *omne*,—and if possible, of the *totum*,—of being and of nonbeing, and of the principal divisions of this *omne*' (EP2:374, 1906). A few years earlier, in 1903, Peirce takes philosophy (as cenoscopy) 'to furnish a *Weltanschauung*, or conception of the universe, as a basis for the special sciences'. He then notes that metaphysics is the discipline 'whose business it is to work this out' on the basis of the results of the prior departments of cenoscopy (EP2:146–147, 1903). Both of these characterisations highlight what still remains to be done once Peirce is finished with the normative sciences, and especially logic. We are looking for an account of the way the world must be if inquiry is to be successful. Since this discipline appeals to an account of inquiry that applies to any possible

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[2]Hookway offers a similar account of the motivations for Peircean metaphysics (Hookway 2000b, p. 169). However, Hookway does not emphasise the cenoscopic idea that we are interested in *any possible* inquirer. This is in part because Hookway is, in the cited paper, largely interested in developments in Peirce's philosophy in the late 1880s. The idea that philosophy should be understood as cenoscopy is a later development.

inquirer, the resulting metaphysics will be maximally general. It will be a conception of the *omne* in so far as it tells us something about any object that could be inquired into.[3] It will be a conception of the *totum* in so far as it provides a picture of reality as a unified whole.[4]

In Chapter Three we considered some core features Peirce's logic. The most important step in Peirce's account of metaphysics is the transition from logic to metaphysics.[5] The dependence of metaphysics on logic is one of the most stable positions across Peirce's career.[6] Having introduced the characterisation of metaphysics as 'completing cenoscopy' and given the above list of metaphysical questions, Peirce offers two reasons for basing metaphysics on logic:

> It would be folly to attack the fastness of the arcana of Metaphysics, with all their barbed wire entanglements, without having thoroughly considered beforehand the nature of the reasoning to be employed and the source of its validity. This is the most obvious reason for making one normative science antecede metaphysics; and also the most available reason and the one most suited to governing the dispositions of the elements of the research. It is not the strongest reason by a good deal. The strongest reason is that most of the metaphysical conceptions, such as Substance, Quality, Relation, Potentiality, Law, Causation, etc., are nothing but logical conceptions applied to real objects, and can only attain elucidation in logical study. (EP2:376, 1906)

The first reason given here concerns the difficulty of metaphysics. This difficulty can be avoided, Peirce thinks, by doing some reasoning about reasoning. Metaphysics can then adopt any principles of proper reasoning developed by logicians.

One reason that metaphysics is difficult is its subject matter. In many domains we can rely on our pre-theoretical habits of reasoning.[7] This is because those habits have developed in response to more-or-less everyday experience and would not have survived if they were not sufficiently reliable in that domain. However, in metaphysics we are not always concerned with 'everyday experience'. As Peirce

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[3]We will see in a moment that Peirce's favoured characterisation of reality does not allow for reality to be ascribed to the absolutely incognisable. On this account, all real objects come within the domain of metaphysics.

[4]That is, in so far as it provides a conception of the sum total of objects, rather than a story that applies to each particular object. This is a distinction between distributive and collective forms of universality (c.f. CP5.531–533, c. 1905).

[5]On the view defended here the influence of the other aspects of cenoscopy largely comes to metaphysics by way of their role in defending views in logic.

[6]We see it as early as 1867, where Peirce holds that 'in the opinion of several great thinkers, the only successful mode yet lighted upon is that of adopting our logic as our metaphysics', and that we ought to follow them in this (CP7.580). Peirce includes amongst there 'great thinkers' at least Aristotle and Kant (e.g. EP2:147, 1903). See also: CP5.4, 1902; NM4:35, 1902; 273, c. 1895.

[7]That is, our habits of reasoning as they are before the critical work of theoretical logic has taken place.

notes, the 'metaphysician who infers anything about a life beyond the grave can never find out for certain that his inference is false until he has gone out of the metaphysical business' (EP1:30, 1898). This problem applies most directly to 'special metaphysics', i.e., metaphysics concerned with some special kind of object, such as God or the soul (c.f. EP260, 1903).[8]

This reason for basing metaphysics on logic is highlighted by Cornelis de Waal, who points out that 'our instinctive *logica utens*, which is generally such a good guide in practical affairs, is too far removed [in metaphysics] from its natural environment to be trustworthy' (De Waal 2005, p. 296). Rather than the everyday, instinctive, habits of reasoning that usually guide us (our *logica utens*), we are to employ a scientific logic (a *logica docens*) (c.f. CP2.186–188, 1902). A *logica docens* includes, in part, the attempt to uncover and criticise features of our habits of reasoning, and to note those that should not be taken beyond the domain of everyday experience.[9] The Peircean *logica docens* also includes various principles that codify the 'scientific attitude'. De Waal takes it that one of these is the principle that we should never 'settle a priori what can conceivably be settled by experience' (De Waal 2005, p. 294). He claims, additionally, that this is one of the principles most commonly ignored by metaphysicians.

However, as de Waal notes, this feature of the dependence of metaphysics on logic also applies to other sciences that push beyond the bounds of everyday experience (De Waal 2005, p. 294). Peirce takes both physics and psychology to be moving into areas in which we can no longer rely on intellectual instincts developed in the course of everyday experience (e.g. CP7.508, 1898). Peirce argues, for instance, that 'it is extremely dangerous to reason at all about psychology without constant appeals to the science of logic' (EP2:386, 1906). This may be an additional reason for thinking that the difficulty of metaphysics is not the strongest reason for basing it on logic (c.f. NM4:37, c.1902). Peirce claims that the strongest reason for basing metaphysics of logic is that 'metaphysical conceptions' are applications of 'logical conceptions'. This reason does not automatically apply to the other post-logical sci-

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[8]Strictly speaking, Peirce distinguishes here between 'general metaphysics' and 'religious metaphysics'. The special/general distinction in metaphysics was most famously made by Christian Wolff, who aligned general metaphysics with a general study of 'being' ('ontology'), and special metaphysics with the study of particular kinds of being (Inwagen and Sullivan 2017, §1). That Peirce has this distinction in mind is suggested by his also aligning the terms 'general metaphysics' and 'ontology' (EP260, 1903).

[9]For instance, Peirce notes that there are some instinctively valid argument forms that work fine when we are dealing with a finite set of objects, but fall apart when applied to infinite collections. For a contemporary use of this idea from Peirce see Legg 2008.

ences. The concept of, say, a 'fast radio burst', is not a concept derived from logic, even if it is far removed from everyday experience.[10] Peirce lists 'Substance, Quality, Relation, Potentiality, Law, [and] Causation' as logical conceptions 'applied to real objects'. Although Peirce is not explicit about exactly what he has in mind here we can take, say, substance to be a metaphysical correlate of the subject or a proposition, while quality is the correlate of the idea of a predicate. Potentiality, law, and causation, would perhaps then be related to certain kinds of arguments (c.f. CP1.515, c. 1896).[11]

Some of the questions that Peirce listed above bring out the logic-metaphysics connection more clearly than others. For instance, the first questions concern whether there is a metaphysical correlate, and if so of what form, for the (logical) concepts of vagueness, impossibility, and possibility. Peirce then goes on to ask whether there can be any strictly individual existence. We can interpret this as asking whether there is a metaphysical correlate for any singular term.[12] The distinctions between reality and fiction, and between external and internal are both developed within Peirce's logic (c.f. EP1:90, 1871).The next two questions concern what kind of being we should ascribe to those concepts, if any at all. Perhaps, for instance, there is nothing that answers to our concepts of 'reality' and 'externality', perhaps there is a continuum between 'internality' and 'externality', or perhaps a Cartesian split between the two is called for (c.f. EP2:151, 1903). In all of these cases, we start with logic and then turn to metaphysics.[13]

A few further examples from Peirce's work will help us to understand the transition from logic to metaphysics. In 1896 Peirce takes metaphysics to consist 'in the results of the absolute acceptance of logical principles not merely as regulatively valid, but as truths of being' (CP1.487, 1896). The text that this comes from is a complex attempt to derive his three categories by considering what the constraints on any possible mathematical hypothesis that might be entertained are. Reflecting on the task that he has set for himself, Peirce continues:

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[10]Fast radio bursts are a kind of signal detected by radio telescopes which are, as yet, unexplained (Mann 2017).

[11]A contemporary approach to the idea that inference and law are closely connected will be presented when we turn to Brandom in the final section of this chapter.

[12]In fact, Peircean thinks that the answer to this question is no: '[g]enerality is, indeed, an indispensable ingredient of reality; for mere individual existence or actuality without any regularity whatever is a nullity. Chaos is pure nothing' (EP2:343, 1905).

[13]The other questions in Peirce's list will be considered when we turn to the relation between metaphysics and idioscopy.

> This much, however, is indisputable: if there are really any such necessary characteristics of mathematical hypotheses as I have just declared in advance that we shall find that there [are], this necessity must spring from some truth so broad as to hold not only for the universe we know but for every world that poet [*sic*] could create. And this truth like every truth must come to us by the way of experience. (CP1.417, 1896)

This is an example of the kind of pattern that should be familiar from our discussion of cenoscopy. Peirce is here aiming to come to conclusions that would be agreed upon by anything that could learn from experience.[14] Recall also that Peirce's term for anything that could learn from experience is the 'scientific intelligence'. This term was used by Peirce at around the same time that he was developing the account of metaphysics in question (CP2.277, 1897).[15]

Having moved through the hierarchy from the top,[16] Peirce offers an account of the 'regulatively valid' laws of logic. At this stage in his career Peirce takes logic to establish (regulatively) that, for any existing subject, it is determinate whether any given predicate applies to it or does not. He also takes logic to establish that there are three forms of inference, although at this stage of the text he does not label them abduction, induction, and deduction (CP1.485, 1896). These laws are 'logically necessary', by which Peirce means that they 'must be true if there be any true answer to every question that has a meaning' (CP1.485, 1896).

If we take the 'regulatively valid' laws of logic to 'apply to being', then we end up, Peirce thinks, with the following metaphysical commitments:

> [I]t is to be assumed that the universe has an explanation, the function of which, like that of every logical explanation, is to unify its observed variety. It follows that the root of all being is One; and so far as different subjects have a common character they partake of an identical being [...] Second, drawing a general induction from all observed facts, we find all realization of existence lies in opposition, such as attractions, repulsions, visibilities, and centres of potentiality generally. [...and] as a deduction from the principle that thought is the mirror of being, the law that the end of being and highest reality is the living impersonation of the idea that evolution generates. (CP1.487, 1896)

At this stage all we are concerned with is how these metaphysical claims are derived from logical claims. For instance, in this text a logical claim about explana-

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[14]Recall from Chapter Two that Peirce's account of experience allows for it to motivate modally strong claims.

[15]Eventually, this appeal to experience will be taken up by the discipline Peirce calls 'phenomenology' or 'phaneroscopy' (c.f. EP2:360–370, 1905).

[16]Note that this text comes from before Peirce included ethics and esthetics amongst the normative sciences. This is not a big problem for the present argument since the inclusion of the other normative sciences affects how Peirce argues for claims in logic, but does not directly affect the move from logic to metaphysics.

tion, that it unifies observed variety, is writ large and projected onto reality. From the fact that explanation unifies variety, we conclude that a reality capable of explanation must be unified.[17] The second logical claim is that the idea of a fact is to be related to the experience of resistance.[18] This is extended to a metaphysical doctrine that aligns existence with resistance. Finally, Peirce's claim that thought is a process that develops towards its end, truth, is likewise read into reality. Peirce here takes the process of inquiry to match, or give a clue to, the processes that occur in nature.[19]

These results are taken by Peirce to be 'metaphysically necessary'. That is, they 'must be true provided every form which by logical necessity must be thought of a given subject is also a form of its real being' (CP1.483, 1896). Peirce then goes on to deal with what he takes to be contingent metaphysical laws. Contingent metaphysical laws are metaphysical laws which, while not enforced by the logic-metaphysics transition, are not yet the direct concern of idioscopy. These laws include claims about, say, the structure of space and time (c.f. CP1.488, 1896). We will not follow Peirce any further along this path here.

Peirce's transition from logic to metaphysics in 1896 brings a few features to the fore. For instance, we see the idea that the laws of logic are 'regulative'. They are, on Peirce's view, derived from an account of what it would be for inquiry to be successful. If inquiry is to be successful, we ought to regulate it by means of the laws developed in logic. The transition to metaphysics is then understood as, at least beginning with, the projection of these regulative laws onto reality. The 1896 strategy also reveals the modal strength that Peirce takes at least some logical

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[17]A Parker puts it, Peirce's position is that 'we must suppose, on methodological grounds, that what is now inexplicable is in principle capable of explanation, that irrational facts that defy all comprehension can eventually be incorporated into our knowledge' (Parker 1998, p. 205). The unity postulated here is a unity of explanation. It allows for variety but it does not allow for brute disunity.

[18]Earlier in the text, Peirce imagines a certain kind of idealist wandering down the street:

> 'Whenever we come to know a fact, it is by its resisting us. A man may walk down Wall Street debating within himself the existence of an external world; but if in his brown study he jostles up against somebody who angrily draws off and knocks him down, the sceptic is unlikely to carry his scepticism so far as to doubt whether anything beside the ego was concerned in that phenomenon.' (CP1.431, 1896)

This kind of experience is taken by Peirce to be the root of the ideas of existence and of facts as things which exert some compulsive power over us.

[19]One way in which Peirce expresses this idea is by saying that we 'all think of nature as syllogizing'. Peirce take it that 'mechanical philosophers' think of nature as including processes analogous to deduction, Peirce wants to recommend that they take it to also behave in ways analogous to induction and deduction (RLT, p. 161, 1898; c.f. W4:422–423/CP2.713, 1883). The idea of the 'entelechy', presented in the previous chapter, is also an attempt to articulate this idea. That is, we are to think of reality as developing towards an end in much the same way that inquiry itself develops towards the 'ultimate interpretant', or absolute truth.

and metaphysical claims to possess. We see him referring to laws that are either logically or metaphysically *necessary*. The kind of necessity that Peirce invoked here is to be understood in terms of cenoscopy.[20] Finally, we get a glimpse of the way in which metaphysics is supposed to 'weld into' idioscopy in Peirce's transition from metaphysically necessary laws, towards a 'metaphysically contingent' conception of space and time that might more directly be appealed to in the special sciences.

Further illustration of Peirce's move from logic to metaphysics can be found in his 1898 Cambridge Conferences Lectures and the lectures on pragmatism presented at Harvard in 1903. In both sets of lectures the move from logic to metaphysics is cashed out in the language of his categories. The three categories, rather than the 'regulative laws of logic', are then read onto reality.[21] We also see that, in addition to the move from logic to metaphysics consisting merely in the 'absolute acceptance' of the categories as 'truths of being', Peirce also offers more direct arguments for the reality of the categories.[22]

In the 1898 lectures, Peirce presents himself as taking 'the Kantian step of transferring the conceptions of logic to metaphysics (RLT, p. 146, 1898). He then proceeds to consider whether the three categories ought to be endorsed as real by metaphysics.[23] At this stage Peirce offers a version of his 'reduction thesis', which includes the claim that the three categories are irreducible to each other.[24] Having defended this view to his satisfaction, Peirce offers us a metaphysical principle:

> I submit for your consideration the following metaphysical principle which is of the nature of a retroduction: Whatever unanalyzable element *sui genereis seems* to be in nature, although it be not really where it seems to be, yet must really be [in] nature

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[20]If we can demonstrate that something must be a feature of any scientific intelligence, we have demonstrated a kind of cenoscopic necessity. In 1896, Peirce takes logical necessity to attach to anything which must be assumed if we take there to be an answer, discoverable by inquiry, to any meaningful question. This is the kind of necessity that cenoscopy hopes to establish. We have seen that metaphysical necessity is then derived from logical necessity.

[21]This 'rather than' is a question of emphasis. Peirce still allows that regulative laws of logic are read on to reality at this stage. Peirce's arguments for the reality of thirdness often take the form of a defence of this move.

[22]Peirce takes a similar approach in 1903, which includes separate arguments for the reality of each category (c.f. EP2:179–195).

[23]In the course of this, Peirce offers a nice, compact, account of what he takes the three categories to be (RLT, pp. 147–149, 1898). A similar approach, emphasising the experiential basis of the categories, is taken in 1903 (EP2:149–159, 1903). This is, incidentally a nice illustration of the gradual development in Peirce's use of phenomenological arguments.

[24]The other feature of the thesis is that no further category is needed, since any 4-place or higher relation can be reduced to a combination of 1, 2, and 3-place relations. This has been discussed in detail in (Burch 1991).

> somewhere, since nothing else could have produced even the false appearance of such an element *sui generis*. (RLT, p. 161, 1898)

This retroduction,[25] allows us to move from claims about the essential and irreducible role of a concept in cognition to claims about reality.[26] It functions as a bridge between logic and metaphysics. According to this principle, if the categories are irreducible to one another, and thus '*sui generis*', and if they seem to be in nature, then we can take them to have *some* extra-cognitive reality.

Peirce continues, considering the category of 'secondness' or 'reaction':

> For example, I may be in a dream at this moment, and while I think I am talking and you are trying to listen, I may all the time be snugly tucked up in bed and sound asleep. Yes, that may be; but still the very semblance of my feeling a reaction against my will and against my senses, suffices to prove that there really is, though not in this dream, yet somewhere, a reaction between the inward and the outward worlds of my life. (RLT, pp. 161–162, 1898)

He goes on to make similar arguments for the categories of firstness and thirdness.[27]

In 1903 Peirce supplements this strategy with some more direct arguments for the reality of each category.[28] Peirce's 1903 argument for the reality of secondness is addressed to those who accept the reality of firstness and thirdness. An example

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[25]Recall that 'retroduction' is another of Peirce's terms for abduction. This will be important when we return to the abductive nature of Peirce's metaphysics.

[26]Many commentators have discussed the relationship between Peirce's strategy here and various forms of transcendental arguments. Those who oppose this alignment tend to point to Peirce's claim that he is 'not one of those transcendental apothecaries, as I call them—they are so skillful in making up a bill—who call for a quantity of big admissions, as indispensable *Voraussetzungen* of logic'. Peirce goes on to claim indispensability is no guarantee of truth, noting that '[i]t may be indispensable that I should have $500 in the bank—because I have given checks to that amount. But I have never found that the indispensability directly affected my balance' (CP2.113, 1902; c.f. Misak 2016a, p. 90; Hookway 2000b, p. 187). However, Peirce only denies that such presuppositions deserve the status of belief or certainty. We can adopt them as regulative hopes however. Those who still want to align Peirce with a transcendental method, tend to agree with Peirce on this. We read the necessary structures of thought onto reality as regulative hopes rather than as necessary (c.f. Gava 2011, pp. 234–236; Pihlström 2009, pp. 60–71; Cooke 2006, pp. 125, 135–913). In so far as the method I am ascribing to Peirce is transcendental, it is transcendental in this latter sense.

[27]In some ways this form of argument is similar to that deployed in Descartes' version of the ontological argument. The idea of God, for Descartes, is an infinite one and, as such, could not have been generated by finite beings like us. This idea must have been *put in* us by an infinite being (Descartes 1984, pp. 27–29). The categories need not be the idea of something infinite. However, in so far as they are irreducible to one another, it is hard to make sense of how a scientific intelligence could generate them in a world which didn't otherwise include them. This is interesting insofar as anti-Cartesianism is often used as a defining feature of pragmatism (c.f. EP1:28–30, 1868).

[28]In this connection, Peirce expresses scepticism that the mind could generate the idea of, say, thirdness, in a world which did not include it (EP2:178, 1903). However, he thinks this scepticism is not yet an argument.

of such a view would be a Berkleyan idealism which accepts the reality of qualities of feeling (firstness) and of archetypal ideas in the mind of God (thirdness). The defence of secondness then consists in an appeal to the phenomenon of surprise. To be surprised, we need to expect something, and that expectation needs to be violated (c.f. Cooke 2011). This violation reveals that the expectation was in fact a feature of our internal world which, the surprise reveals, is distinct from the external world:

> The old expectation, which is [what she] was familiar with, is his inner world, or *ego*. The new phenomenon, the stranger, is from the exterior world or *non-ego*. (EP2:195, 1903)

There are a few additional turns to this argument, but this is enough to give the basic idea.[29]

An emphasis on the logic-metaphysics relation encourages the thought that Peirce's metaphysics is both *a priori* and modally demanding. By 'modally demanding' I mean that the conclusions of metaphysical reasoning, unlike those of the special sciences, include claims about what *must* be the case or what *couldn't possibly* be the case in any world in which inquiry could be successful. Such a conception of metaphysics has been attributed to Peirce by both supporters and detractors of his metaphysical writings.[30] As we have now seen, this is certainly an aspect of Peirce's account of metaphysics. However, in so far as it derives from the cenoscopic method it remains consonant with a pragmatist approach to metaphysics.[31] After looking at the metaphysics-idioscopy relation as well we will be able to see

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[29]Peirce, for instance, offers slightly different arguments depending on whether we take the claim that we are surprised to be either inferred or directly perceived (EP2:194, 1903).

[30]For instance, Macarthur takes Peirce to be excluded from his favoured group of pragmatists because Peirce entertains a kind of metaphysical necessity (Macarthur 2008, p. 196). Thomas Goudge is famous for introducing the 'two Peirce's' interpretation, according to which there are independent 'naturalist' and 'transcendentalist' strains in Peirce. On this view, Peirce's metaphysics is an example of the latter (Goudge 1947; Goudge 1950, pp. 5–6). Forster offers a long list of the attitudes of various Peirce scholars on the issue of the *a priori* (Forster 2011, p. ix n.1).

[31]That, at least, Peirce thinks of this logic to metaphysics pattern as consistent with pragmatism is made clear by this passage from his Baldwin's Dictionary entry for the word 'pragmatism':

> Synechism is founded on the notion that the coalescence, the becoming continuous, the becoming governed by laws, the becoming instinct with general ideas, are but phases of one and the same process of the growth of reasonableness. This is first shown to be true with mathematical exactitude in the field of logic, and is thence inferred to hold good metaphysically. It is not opposed to pragmatism in the manner in which C.S. Peirce applied it, but includes that procedure as a step. (CP5.4, 1902)

In this passage we also see a particular version of the claim that the patterns and processes of thought are also the processes that occur in nature. Both share the 'growth of reasonableness'.

how both the cenoscopic and the 'scientific' aspects of Peirce's metaphysics can be held together.

1.2 Welding into Idioscopy

The sixth volume of Peirce's *Collected Papers* was given the title 'Scientific Metaphysics'.[32] The use of this title suggests that Peirce's metaphysical work should be closely related to his work in the other sciences. The editors divide Peirce's metaphysics into the 'scientific' material concerned with laws of nature and cosmology from his work on 'religion, or "psychical metaphysics"', which they take to be 'tenuously connected' with the rest of Peirce's system and of merely 'sociological or biographical' interest (CP6.v, 1935). This focus on the connection between Peirce's metaphysics and the natural sciences helps us to see certain features of Peirce's position even if we do not endorse the claim that his metaphysical work is not of systematic importance.[33]

According to the hierarchy of sciences, idioscopy both takes principles from and provides suggestions to metaphysics. We will consider each of these relations in turn. On Peirce's view the influence of metaphysics is often most pronounced when it is being done poorly. Bad metaphysics blocks paths which idioscopic scientists should in fact be taking. It does this by prejudicing scientists against hypotheses that should be tried. An adequate metaphysics would, instead, leave as many doors open as possible. In this connection, Peirce takes one of the lessons of Duns Scotus's philosophy to be that 'real problems cannot be solved by metaphysics, but must be decided according to the evidence' (CP4.28, 1893). However, rather than appealing to the authority of the church (*a la* the scholastics), Peirce takes the relevant 'evidence' to come from the self-correcting methodology of science (CP4.28, 1893). Metaphysics, then, must not attempt to decide questions which are decidable by some idioscopic science or other.

This is one aspect of Peirce's insistence that metaphysics should become scientific. That is, it must be responsive to developments in the special sciences.[34]

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[32]Peirce proposed a volume with this title in 1893 (CP8, 1893, 5).

[33]We have already used some material from the 'merely biographical' section of *Collected Papers*. For instance, the account of the role of abduction developed in Peirce's 'A Neglected Argument for the Reality of God'.

[34]Another sense in which Peirce makes metaphysics 'scientific' is by deploying the 'method of science'. But this is simply another aspect of the dependence of metaphysics on logic: we must use the best methods of inquiry that we have to hand, and Peirce takes the superiority of the 'method of science' to be a result in the study of logic.

This is visible in the hierarchy in terms of the provision of 'suggestions' to metaphysics from the special sciences. A concrete example of Peirce using such a suggestion in his metaphysical work is the extension of statistical forms of explanation in thermodynamics to an account of the development of laws of nature.[35]

Because metaphysics provides principles to idioscopy, bad metaphysics can get in the way of good science. Peirce offers the example of the reception of Pasteur's work on the germ theory of disease. According to Peirce, the popular 'nominalistic metaphysics' of Claude Bernard, especially the claim that a disease must be a collection of symptoms, rather than an 'entity', prevented the uptake of Pasteur's discoveries (CP1.109, 1896). According to Peirce, a good metaphysics will leave us provided with 'pigeonholes' for any fact that might be discovered in the special sciences. A less flexible metaphysics will 'leave us unprovided with pigeonholes in which to file important facts so that they have to be thrown in the fire' (CP1.153, c. 1897).

The provision of principles from metaphysics to the special sciences happens whether the inquirer realises it or not. This is why Peirce takes metaphysics to be unavoidable. Simply, all idioscopy assumes the truth of principles that they can't themselves put to the test by idioscopic methods. For instance, Peirce notes that 'we find physicists, Kelvin, Maxwell and others, assuming that a body cannot act where it is not [...] At another time, we find them assuming that the laws of mechanics [...] hold good for the smallest corpuscles' (CP1.129, 1905). This requires, as we saw in Chapter Two, substantive assumptions about causation and mereology that are more general than the subject matter of physics. This discussion just quoted from concludes with one of Peirce's more well-known claims about metaphysics:

> Find a scientific man who proposes to get along without any metaphysics—not by any means every man who holds the ordinary reasonings of metaphysicians in scorn—and you have found one whose doctrines are thoroughly vitiated by the crude and uncriticized metaphysics with which they are packed. (CP1.129, 1905)

There is no way to avoid assuming some general principle or other when engaged in idioscopic research. The only option Peirce allows for is whether you are aware of what those principles are or not. Another way of putting the same point about dependence is to say that metaphysics constrains the hypotheses we consider for investigation. 'In the light of one's metaphysics and general conception of the de-

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[35]We will consider this example in more detail in a moment.

partment of truth dealt with, one considers what different hypotheses have any claims to investigation' (CP7.83, 1902; see also CP8.109, 1900). This is just to note that fairly general presuppositions will impact both our estimations of the plausibility of various hypotheses, whether some hypothesis is even possibly true, or even whether the hypothesis is meaningful at all.[36]

Peirce takes the nomological sciences to be especially dependent on logic and metaphysics (CP2.121, 1902). An example from Peirce's own metaphysical work may help. In his evolutionary cosmology, Peirce takes physics to have been held back by the metaphysical assumption that all laws must be deterministic and universal. Part of his work in the *Monist* series is to argue that this restriction in our understanding of what a law is, is not justified by experience.[37] The result is the view which Peirce calls 'tychism', the view that there is absolute chance in reality. This metaphysical work, Peirce thinks, will enable the physicist to consider a greater range of possible explanations for phenomena.

Kelly Parker holds that '[a]ll of Peirce's metaphysical questions concern the operation of *laws* in the universe of common experience' (Parker 1998, p. 56). Idioscopy also involves laws. This is particularly true of the 'nomological sciences', which attempt to determine the laws that hold of a given range of phenomena. The concern with law is the point at which metaphysics 'welds into' idioscopy. However, metaphysics 'does not study the laws governing reality, but rather the laws governing the operation of laws themselves' (Parker 1998, p. 56).

The importance of the role of laws in Peirce's metaphysics is drawn out effectively by Hookway. As Hookway presents Peirce, he is motivated by the desire to explain why there are any laws at all.[38] However, this explanatory demand leads to an infinite regress if we take explanation to take the form of putting the explained under a law. If we tried that strategy here we would end up with a law of laws, and then a law of laws of laws, and so on. Peirce's strategy for getting around this problem is to introduce an evolutionary hypothesis, according to which laws can evolve from a less law-governed state of affairs (Hookway 2000b, pp. 172–173).[39]

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[36]This dependence claim was defended in Chapter Two.

[37]The arguments in question appear in Peirce's 'The Doctrine of Necessity Examined' (W8:111–125/EP1:298–311, 1892).

[38]Reynolds also notes that regularities in general are one of the phenomena that Peirce wants his cosmology to explain (Reynolds 2002, pp. 13–14).

[39]This evolutionary hypothesis requires us to take tychism seriously. If laws can evolve from a state without laws, then we need to allow that some events are not entirely determined by laws. That is, we need to endorse some form of absolute chance (W8:101/EP1:288, 1890).

So far, we have primarily been considering the dependence of idioscopy on metaphysics. This dependency has been most notable in examples where it goes wrong. That is, in examples where metaphysical assumptions have stood in the way of scientific advances. We have not, so far, looked at the 'suggestions' that idioscopy provides to metaphysics. One feature of the above discussion that is worth noting here is that the stories told by Hookway and Reynolds present metaphysical problems as being generated by problems in idioscopy. We want an explanation for why the laws of nature are the way they are, for instance. One of Peirce's motivations for telling his evolutionary story about the laws of nature is that he thinks it might help us to figure out an answer to the more narrowly physical question of why the various laws of nature have the constants that they in fact do.[40] The provision of problems is one kind of suggestion that can get passed from a subordinate to a superordinate science.

Two other forms of 'suggestion' are important to note: suggestion of methods and provision of data. For instance, when Peirce inaugurates his *Monist* metaphysical project in 'The Architecture of Theories', he offers a recommendation:

> What I would recommend is that every person who wishes to form an opinion concerning fundamental problems, should first of all make a complete survey of human knowledge, should take note of all the valuable ideas in each branch of science, should observe in just what respect each has been successful and where it has failed, in order that in the light of the thorough acquaintance so attained of the available materials for a philosophical theory and of the nature and strength of each, he may proceed to the study of what the problem of philosophy consists in, and of the proper way of solving it. (W8:85/EP1:286, 1891)

Later in the paper, Peirce introduces the idea that statistical explanations have been successful in thermodynamics, and that a similar deployment of the notion of chance that such explanations involve might be useful in our metaphysics (c.f. W8:105/EP1:292, 1891).[41] That is, a methodology is suggested by a subordinate science, to a superordinate science. In order for methods to be taken up by a superordinate science, they need to be generalised to apply to a wider range of objects.

Peirce also notes that the results of subordinate sciences can be taken up by a superordinate science as material to be used either in inductive reasoning or to be generalised from. This idea is present in one of Peirce's early presentations of the hierarchy of sciences as based on the principle that

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[40]This aspect of Peirce's metaphysics is considered in: Murphey 1993, pp. 236–238 and Reynolds 2002, pp. 17–18.

[41]This story is developed in detail in Reynolds 2002.

> the sciences may be arranged in a series with reference to the abstractness of their objects; and that each science draws regulating principles from those superior to it in abstractness, while drawing data for its inductions from the sciences inferior to it in abstractness. (CP3.427, 1896)

If we take some metaphysical principle to apply to all objects of subordinate sciences, then any result of a subordinate science is relevant to inductive inferences in the superordinate science. For instance, if in metaphysics we hold that all events are the result of deterministic laws, then the results of quantum mechanics will be a problem. We might, then, use indeterministic accounts of quantum mechanics as part of an inductive argument against metaphysical determinism. We've already seen that the methods of idioscopic sciences can be generalised and applied in philosophy. Peirce also holds that the results of idioscopic sciences can be generalised. For instance, he holds that, despite the cenoscopic nature of philosophy it can use idioscopic results as the basis for further generalisations:

> I would even grant that philosophy, in the strictest sense, confines itself to such observations as must be open to every intelligence which can learn from experience. Here and there, however, metaphysics avails itself of one of the grander generalisations of physics, or more often of psychics, not as a governing principle, but as a mere datum for a still more sweeping generalisation. (CP3.428, 1896)

Here we also see something of the claim the metaphysics and idioscopy 'weld into' one another. At the point at which the data from physics or 'psychics' is taken up by metaphysics it is hard to draw a clean line between cenoscopy and idioscopy.

The questions that appear towards the end of Peirce's list make more sense in light of the idioscopy/metaphysics relations that we have just been discussing. This applies fairly obviously to Peirce's question about space and time. Peirce asks, for instance, about whether time and space are real and what their geometrical structure is. This is particularly clear in his question about the 'Chorisy', etc, of space.[42] It even applies to his question about 'hylozoism', or the possibility of the universal applicability of biological forms of explanation. We also see questions about the nature of mind and teleology that would have important applications in psychology and the like.

If we emphasise the metaphysics-science relation and the motivations for Peirce that come from issues in the idioscopic sciences of his day to the exclusion of the logic-metaphysics relation, then we will be left with a conception of metaphysics

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[42]The strange terminology that Peirce uses here come from his attempts to develop mathematical topology. For an account of these topological concepts see Havenel 2010.

according to which it is just a very general kind of natural science. This would align Peirce with something like the Quinean understanding of philosophy as continuous with the natural sciences. For Quine there is no important distinction between natural scientific and philosophical or mathematical statements, the latter are simply further removed from direct test than the former (e.g. Ullian and Quine 1978). However, our discussion of the cenoscopic method in Peirce should already have provided us with enough to understand that this is not Peirce's view. In the following section, we will put the cenoscopic and the special-scientific aspects of this story together.

1.3 Cenoscopy and the Idea of Reality

1.3.1 Cenoscopic Solutions to Idioscopic Problems

The fact that Peircean metaphysics is responsive to developments in, and current problems for, the natural sciences, does not undermine the idea that metaphysics is a form of cenoscopy. We've already seen some of the reasons why Peirce takes idioscopy to depend on cenoscopy for principles.[43] We are now in a position to offer a further reason. Namely, that the kind of problems given by idioscopy to metaphysics are problems which require the kind of reflection characteristic of cenoscopy.

We have seen that metaphysical assumptions can come to the fore at times of crisis in the special sciences.[44] Considering one of the examples from the previous section in more detail will help here. One of the motivations for Peirce's cosmology, emphasised by Reynolds and Murphey, is to overcome what he takes to be a block in the sciences of his day. Consider the following:

> To find out much more about molecules and atoms, we must search out a natural history of laws of nature, which may fulfill that function which the presumption in favor of simple laws fulfilled in the early days of dynamics, by showing us what kind of laws we have to expect and by answering such questions as this: Can we with reasonable prospect of not wasting time, try the supposition that atoms attract one another inversely as the seventh power of their distances, or can we not? To suppose universal laws of nature capable of being apprehended by the mind and yet having no reason for their special forms, but standing inexplicable and irrational, is hardly a justifiable position. Uniformities are precisely the sort of facts that need to be accounted for. That a pitched coin should sometimes turn up heads and sometimes tails calls for

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[43]In addition to the arguments presented in this chapter, others were contained in Chapter Two.

[44]This is reminiscent of Kuhn's statement that 'critical discourse recurs only at moments of crisis when the bases of the field are again in jeopardy [. . .] [o]nly when they must choose between competing theories do scientists behave like philosophers' (Kuhn 1970, pp. 6–7).

no particular explanation, but if it shows heads every time, we wish to know how this result has been brought about. Law is *par excellence* the thing that wants a reason.

Now the only possible way of accounting for the laws of nature and for uniformity in general is to suppose them results of evolution. This supposes them not to be absolute, not to be obeyed precisely. It makes an element of indeterminacy, spontaneity, or absolute chance in nature. (W8:101/EP1:288, 1891)

Peirce takes there to be some further questions which we might hope to answer, but seem intractable now.[45] It is important to note that the problem Peirce is attempting to answer here is not a problem that is only visible from the metaphysical perspective. The problems are internal to the physical sciences. In this passage Peirce cites difficulties in understanding why atoms behave as they do and the fact that physicists at the time had no obvious means of solving the problem.[46]

These idioscopic problems result in a standstill. This is where Peirce's metaphysics comes in. The attempted solution he offers turns on a kind of cenoscopic reflection. We see that Peirce's move towards a solution starts with some general claims about explanation. Peirce provides a reason to think that a rational explanation is wanted for the 'special forms' of the laws of nature. It is, he thinks, a strange position to take it that there is *no* explanation available. This is, in part, a cenoscopic claim – we are to hope there is an answer to any meaningful question we might ask. This hope is rational, Peirce thinks, for all possible inquirers.[47] Peirce then turns to some general theses, also cenoscopic, about what kind of thing demands an explanation. We then get the proposal for an cosmology briefly discussed above according to which the laws of nature are the result of an evolutionary process.[48]

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[45]Peirce's ambition here is, in fact, greater than understanding atoms, molecules, and the laws of physics. He wants this story to answer why there is something rather than nothing (W6:208–209/EP1:277–278, 1888); to explain growth in general (W8:122/EP1:307–308, 1892); and to provide a satisfactory unification mind and matter (W8:123–124/EP1:309, 1892).

[46]Murphey highlights the increasingly serious problems with Newtonianism that were arising at the turn of the century (Murphey 1993, pp. 327–328). Peirce himself also points to the increasing need to introduce complex auxiliary hypotheses with no clear motivation beyond the fact that we seem to hit on something that works. He points, in particular, to the difficulties then arising concerning the understanding of light as particle or wave; and explaining thermodynamic phenomena (W8:101/EP1:288, 1891).

[47]I say 'in part' because Peirce also offers the local point that we already accept that the laws are apprehendable by minds. It is hard to know exactly what Peirce has in mind here. He seems to think there is something particularly strange about the idea that we can understand *that p*, without there being an available explanation for the fact that *p*.

[48]The alternative hypothesis, that the laws of nature are fixed, naturally goes along with the claim that they are brute facts. Peirce takes an appeal to brute facts to be no explanation at all, and so to rule out from the armchair, the possibility of answering certain questions that we might hope are answerable (c.f. CP1.175, c. 1897).

The key point to take away from this example is not that we should buy into Peirce's evolutionary cosmology.[49] The particular features of the evolutionary cosmology illustrate a pattern which a Peircean metaphysics ought to follow. The idea is that idioscopic problems, points at which we don't know how to go on given present methods or assumptions, can have cenoscopic solutions. The interpretations of Peirce's metaphysics as simply very general science misses the specifically cenoscopic strategy that Peirce's metaphysics deploys. It's only by considering the constraints on explanation in general that Peirce's metaphysics enables us to criticise our present assumptions about the relevant range of hypotheses to try. The practical value of such a project lies in its tendency to produce creative hypotheses that are then liable to further testing within the special sciences. In so far as it encourages this kind of creativity, it facilitates the process of inquiry itself.

1.3.2 Realism: Nominalist or Realist?

For this strategy to work, that is, for cenoscopic solutions to be available to this kind of idioscopic problem, we have to take reality to be explicable. We are faced with a phenomenon that we struggle to explain, and we ask ourselves a questions about what might count as an appropriate explanation for the phenomena in question. This process, if successful, results in a new range of hypotheses to consider. That is, the increased control we gain over the hypotheses that we consider is the result of consideration of ourselves and of the practice of inquiry. It is not gained by virtue of, say, just paying more attention to the external world.[50] This requires us to take reality to, in some manner, conform to what we find when we consider ourselves and the project of inquiry. In Peirce's various attempts to shift from logic to metaphysics, some such 'regulative law' is involved. As a result, it is worth clarifying the concept of reality that Peirce deploys.

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[49]We need not endorse Peirce's own conclusions to recognise his project as a worthwhile one at the time. However, it is worth pointing to a contemporary successor project of Peirce's cosmology within physics being worked out by the physicist Lee Smolin (Smolin 2014, e.g.). It is worth noting that Smolin's project aims to provide, within the context of a Peirce-inspired evolutionary cosmology, an account of why the laws of nature involve the particular constants that they do (for instance, why the stationary mass of an electron is 9.11×10^{-31} and not some other value). As we have just seen, one of Peirce's main aims was to provide a general hypothesis that might allow for an explanation of the these constants.

[50]Recall that abduction, or explanatory inference, is the result of 'internal' rather than 'external' observation.

In the context of a discussion of the medieval problem of universals Peirce distinguishes between two conceptions of what we mean when we say something is 'real'. Peirce's characterisation of the problem of universals is as follows:

> The question, therefore, is whether 'man', 'horse', and other names of natural classes, correspond with anything which all men, or all horses, really have in common, independent of our thought, or whether these classes are constituted simply by a likeness in the way in which our minds are affected by individual objects which have in themselves no resemblance or relationship whatsoever. (W2:467/EP1:88, 1871)

According to Peirce the debate between realists, who affirm the reality of some commonality 'independent of our thought', and the nominalists, who don't, turns on a more fundamental difference concerning the meaning of 'real'. Both camps agree on the following characterisation of 'real', which Peirce ascribes to Duns Scotus: '[t]he real is that which is not whatever we may happen to think it, but is unaffected by what we may think of it' (W2:468/EP1:88, 1871).

However, the two sides disagree about how to make sense of this 'mind independence' criterion.[51] According to the 'nominalist conception' of reality:

> [Our] thoughts [. . .] have been caused by sensations, and those sensations are constrained by something out of the mind. This thing out of the mind which directly influences sensation, and through sensation thought, because it is out of the mind, is independent of how we think it, and is, in short, the real. (EP1:88, 1871)

The nominalist conception of real, which Peirce thinks is quite natural, ascribes reality to those things which cause our sensations.

The 'realist conception' of reality is characterised in terms of the process of inquiry. In the previous chapter we saw that Peirce offers us a conception of truth in terms of the 'final opinion'. This conception takes there to be some result which, if the process is functioning well, all inquirers would converge on despite starting with distinct methods and biases. On the realist conception of reality ascriptions, everything 'which will be thought to exist in the final opinion is real, and nothing else' (W2:469/ EP1:89, 1871). The final opinion is also mind-independent in the sense that it is 'independent of how you or I, or any number of men think' (W2:469/EP1:88, 1871). If this were not the case then the realist conception would not even count as a conception of 'reality'.

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[51]Peirce recognises that a mere appeal to 'mind independence' does not do enough to tell us what we mean by ascribing reality to something. This issue has become a concern in contemporary metaphysics. For instance, see the distinction drawn by Khalidi between mind-dependence as causal claim vs. as a claim that the item in question is subjective (Khalidi 2013, pp. 147–150).

Peirce takes it that the 'final opinion' will include general concepts like 'man' and 'horse'. As a result, if we adopt the realist conception of reality ascriptions then there is no difficulty in allowing real generality into our ontology. If we take on the nominalist conception we will have some difficulties. For one thing, the real would then be associated with the causes of sensation, which we have no particular reason to suppose are not mere individuals. Moreover, if we take the understanding of a thing as falling under general concepts as an achievement of thought, then the nominalist conception of reality puts reality at the wrong end of the process for us to endorse real generality.[52] This thought is taken up by Peirce one year after the Berkeley review:[53]

> our reasonings begin from the most various premises (otherwise no process to investigation to settle belief would be necessary) and lead ultimately to one conclusion.
>
> The reality must be connected with this chain of reasoning at one or other extremity. According as we place it at one end of the other, we have realism or nominalism.
>
> The reality must be so connected with our thought that it will determine the conclusion of true investigation. But the conclusion depends on the observations. Reality must then be connected with sensation as its cause (or to use another phrase, as its possibility) and this is the nominalistic theory of reality.
>
> But reality is independent of the individual accidental element of thought. Now on the observation end of the chain of reasoning all is accidental and individual. But at the conclusion end is one result to which alone investigation will ultimately lead. The personal prejudices or other peculiarities of generations of men may postpone indefinitely an agreement in this opinion; but no human will or limitation can make the final result of investigation to be anything else than that which it is destined to be. The reality, then, must be identified with what is thought in the ultimate true opinion. This is the realistic view of reality. (W3:55–56, 1872)

The problem with placing reality at the 'observation end' of the chain of reasoning is that the objects we take to be real become intractable for inquiry. The 'observation end' is 'individual' and 'accidental', inquiry, on the other hand, can only deal with sufficiently stable regularities: the things that sustained, communal, inquiry would come to acknowledge.[54] In his final attempts to characterise and defend his pragmatism, Peirce argues that inquiry is directed to 'experimental phenomena' rather than single experiments. According to Peirce '[w]hen an experimentalist speaks of a phenomenon, such as "Hall's phenomenon," [...] he does not mean any

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[52]Peirce argues that the judgement of similarity between two sensations is the result of some (fairly basic) reasoning. On this understanding any two sensations do not 'have in themselves anything in common, and far less is it to be inferred that the external realities have' (EP1:88, 1871).

[53]See also: CP7.339, n.d..

[54]Note that we also get something of Peirce's identity theory here. The reality is 'identified with what is thought in the ultimate true opinion'.

particular event that did happen to somebody in the dead past, but what surely will happen to everybody in the living future who shall fulfill certain conditions' (EP2:340, 1905). Peirce, then, adopts the realist conception of reality ascriptions.

Perhaps surprisingly to the modern ear, this realist conception of reality ascriptions leads to a kind of idealism. This is because it rejects the idea of the radically incognisable. If something were radically incognisable, then it could not feature in the final opinion, and consequently would not be real.[55] This distinguishes the Peircean conception of reality ascriptions from the conception that is often operative in contemporary metaphysics. Some even take the defining feature of realism about some domain to be that it enables truth to outrun inquiry.[56] Peirce would take this to be an instance of a nominalistic conception of reality.[57]

Something like the realist conception of reality needs to be endorsed in order for the Peircean strategy of moving from logic to metaphysics to work. We also need it if we are to provide metaphysical solutions to idioscopic problems. Reflection on the way that any possible inquirer must take the world to be would not tell us anything about the way the world actually is unless we adopt something like Peirce's understanding of what it is to ascribe reality to something. Without the conception of the meaning of 'real' that Peirce adopts, there would be no reason to think that reflecting on the structure of our own thought would enable us to produce informative general hypotheses about the nature of reality. Moreover, there would be no reason to think that metaphysical reflection could help to solve idioscopic problems in the way outlined earlier in this section.

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[55]This is to go against Hausman, who takes idealism to require that reality is 'exhausted by what is mindlike', or has an origin in something 'constituted exclusively as thought' (Hausman 1993, p. 145). He elsewhere says that we must take there to be some 'residue-reality' which is left over after any attempt to render the world intelligible, and is aligned with the categories of firstness and secondness (Hausman 1993, pp. 160–261). That is, on Hausman's view, one is an idealist if they accept only the third category. This was indeed Peirce's charge against the Hegelian idealists. However, we need not ascribe this view to Hegel (see Stern 2013, pp. 55–59). Nor does the meaning of 'idealist' I am using here require us to think that the other categories can be done without.

[56]This is how the criterion of mind independence is sometimes taken. For instance, it is taken to be a commitment of 'robust' moral realism that the metaphysics and semantics of moral discourse are entirely independent (c.f. Ingram 2015; Kahane 2013, p. 152). Or consider the kind of claim made in Van Fraassen's constructive empiricism, where the best model for the purposes of inquiry might still be false (e.g. Fraassen 1980, p. 12). On these pictures, the real state of affairs could be entirely distinct even from perfect inquiry.

[57]One of the *problems* with the nominalist conception of reality is that opens up space for sceptical hypotheses: 'This theory of reality is instantly fatal to the idea of a thing in itself,—a thing existing independent of all relation to the mind's conception of it' (W2:469/EP1:90, 1871).

Peirce is explicit in a few places that the claim that there is a reality in the sense we are discussing here is a hypothesis, albeit a hypothesis built deeply into the practice of inquiry:

> What is reality? Perhaps there isn't any such thing at all. As I have repeatedly insisted, it is but a retroduction, a working hypothesis which we try, our one desperate forlorn hope of knowing anything. Again it may be, and it would seem very bold to hope for anything better, that the hypothesis of reality though it answers pretty well, does not perfectly correspond to what is. But if there is any reality, then, so far as there is any reality, what that reality consists in is this: that there is in the being of things something which corresponds to the process of reasoning, that the world *lives,* and *moves,* and *has its being,* in a logic of events. (RLT, p. 161, 1898)

Elsewhere, Peirce entertains the thought that reality might come in degrees. Some things may be 'more real' than others, in so far as they are more law-governed than others.[58] We might think of the hypothesis that there is something that answers to the realist conception of reality ascriptions as the first hypothesis of metaphysics. Having adopted this hypothesis, metaphysics can, on the basis of the normative sciences, provide its account of 'the most general features of reality and real objects' (EP2:375, 1906).

2 Metaphysics and Abduction

So far in this chapter we have seen something of the functional role that Peirce has in mind for metaphysics. Metaphysics is that part of cenoscopy which enables the transition from cenoscopy to idioscopy. Cenoscopy, we've seen, studies that which is available to any possible inquirer, and develops a normative esthetics, ethics, and logic.[59] Metaphysics, on the story that I have derived from Peirce, attempts to provide an account of the general structure of any world that could be the object of inquiry. This, along with the realist understanding of 'real', allows us to ascribe

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[58]Peirce holds, for instance, that

> being is a matter of more or less, so as to merge insensibly into nothing. How this can be appears when we consider that to say that a thing is is to say that in the upshot of intellectual progress it will attain a permanent status in the realm of ideas. Now, as no experiential question can be answered with absolute certainty, so we never can have reason to think that any given idea will either become unshakably established or be forever exploded. But to say that neither of these two events will come to pass definitively is to say that the object has an imperfect and qualified existence. (EP2:2, 1893)

[59]While this thesis has focused its attention on Peirce's logic, we have seen something of the dependence of logic on ethics and esthetics. For instance, we saw that one aspect of Peirce's account of truth understands it as a particular kind of ideal for practice, and thus as subject to ethical criticism.

to Peirce a conception of metaphysics that is in some ways quite traditional. Metaphysics is the study of the way reality must be. However, we also saw that Peirce thinks that the view that there is any reality at all is the result of a fairly deep lying abductive inference. As a result, it is not something we can be entirely confident in adopting. The role of this hypothesis, and of metaphysical hypotheses in general, is to provide some explanation of the possibility that inquiry might succeed. Peirce's metaphysics thus holds on to the traditional understanding of metaphysics as aiming at a certain kind of necessity claim, but rejects the the view that these claims are certain.[60]

I now turn to the task of putting together two positive proposals for Peircean metaphysics. As in the previous chapter, one is a 'contextualist' Peircean metaphysics and the other is an 'absolutist' one. This chapter also follows the last in taking the absolute to be an important addition to the contextualist understanding of Peirce. While both take seriously the explanatory demand that arises from taking inquiry to have some possibility of attaining the truth, they diverge over the notion of truth that we should adopt. In so far as the contextualist notion of truth fails to be sufficiently cenoscopic, the contextualist proposal for Peircean metaphysics will too. On my view, then, the absolutist proposal is the one that Peirce himself had in mind. Before setting out these options, it is worth briefly considering what it means to call metaphysics 'abductive'.

One sense in which metaphysics is abductive that we do not need to spend much further time on is just that it is a branch of cenoscopy. We have seen already how cenoscopy is motivated by an attempt to understand the need for abductive inferences in inquiry while also maintaining a sufficiently robust conception of truth. That is, it seeks to show that the necessity of abductive contributions from inquirers is compatible with the claim that the results of well-functioning inquiry are not dependent on contingent features of some inquirer or other. So metaphysics is 'abductive' in the sense that one of its primary interests is the conditions for the success of abduction. Metaphysics is also abductive in the sense that it depends, more than some other sciences, on the use of abductive inferences.[61] It is worth pausing briefly over why this is the case.

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[60]Peirce's approach is thus distinct from Kant's attempt to treat hypotheses as 'forbidden commodities' and on that basis to aim at 'apodictic certainty' (Kant 1998, Axv).

[61]We've just seen that the 'hypothesis of reality', the hypothesis that there is a reality at all, is the result of one such hypothetical inference.

Peirce is clear that he does not think of metaphysics as primarily a deductive discipline:

> The demonstrations of the metaphysicians are all moonshine. The best that can be done is to supply a hypothesis, not devoid of all likelihood,in the general line of the growth of scientific ideas, and capable of being verified or refuted by future observers. (CP 1.7, c. 1897)

We can take the 'demonstrations' that Peirce has in mind here to be deductive arguments.[62] Peirce contrasts this kind of demonstration, which might aim at both necessity and certainty, with the provision of 'a hypothesis'. This hypothesis, whatever it is, is such that it might be 'verified or refuted by future observers'. This passage highlights hypothetical inference, but by noting the possibility of testing it also includes deduction and induction. In order to test by observation, induction is required, and in order to do that certain experiential consequences must be deduced from the hypothesis.[63]

One of the enduring features of Peirce's philosophy is his claim that there are three fundamental forms of inference: deduction, induction, and abduction. Deductive and inductive inferences are, of course, familiar topics of logic.[64] Peirce struggled to articulate his conception of abduction, and it evolved over time.[65] Abduction is, throughout this development, associated with the introduction of hypotheses.[66] The second reason that metaphysics is an abductive discipline is simply that it is one whose dependence on abduction is particularly pronounced. On Peirce's view, all sciences involve all three kinds of reasoning. Mathematics is

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[62]One of the themes in Peirce's account of metaphysics that this thesis does not touch in any detail is the relationship between mathematics and metaphysics. Peirce often makes the claim that 'metaphysics has always been the ape of mathematics' (CP1.130, 1893; see also CP1.54, 1896; W6:203–204/EP1:273, 1887–1888; W8:109/EP1:296, 1891; CP8.92, 1892). Peirce then goes on to argue that since mathematics has abandoned geometrical demonstrations from self-evident axioms, the metaphysicians will have to too (c.f. Cooke 2006, p. 82). Rather than deduction from unimpeachable premises, the metaphysician will have to engage in abductive reasoning. Peirce's critique of the use of traditional (Euclidean) geometric form in philosophy and mathematics is considered in Dea 2006.

[63]Peirce offers a compact statement of this division of labour between the three forms of inference at EP2:440–442, 1908. See also: EP2:532n12, 1903.

[64]Although, as Wim Staat notes, Peirce's accounts of deduction and induction are themselves quite idiosyncratic (Staat 1993, p. 225). However, they are not so idiosyncratic that they need to be considered at any further length.

[65]Anderson helpfully traces the course of this evolution and situates Peirce's account of abduction as rooted in a reading of Aristotle's 'apagogue' (Anderson 1986, p. 147).

[66]While Peirce's technical treatments of the distinction between the three forms of reasoning change over time, he maintains the basic idea that each has its own functional role in inquiry: abduction introduces hypotheses, deduction derives consequences from them, and induction compares those consequences with experience (e.g. W3:323–338/EP1:186–199, 1878; EP2:33, 1898).

a science that is characterised by a high dependence on deduction. Peirce follows his father Benjamin Peirce by using 'the science which draws necessary conclusions' as a definition of mathematics (CP3.588, 1898). On the other hand, some idioscopic sciences are characterised more by induction than abduction or deduction. For example, if I already have a good, say, classification of possible flags, then my vexillology might be largely a matter of finding flags and putting them in their right box. That is, it will be a discipline characterised by its relatively prominent use of induction. A more serious example of this kind of work is the development of the periodic law in chemistry by Mendeleev.[67]

Finally, it is worth briefly distinguishing the proposal for an abductive metaphysics being made here from current proposals for the use of 'abduction' in philosophy. Timothy Williamson has recently argued that philosophy should adopt an 'abductive' rather than 'deductive' method (Williamson 2016, p. 274).[68] However, Williamson understands abduction to be equivalent to inference to the best explanation (IBE) (Williamson 2016, p. 265). On Williamson's view, IBE assumes that we have a series of hypotheses already available and a body of data against which to evaluate them. We then rank our hypotheses as explanations of the data in question and adopt the one that ranks highest. There are many possible criteria for ranking hypotheses, and these may vary depending on the investigation in question.[69]

Abduction and IBE, though often confused, are distinct forms of inference. For one thing, abduction produces conclusions with a certain functional role: hypotheses or questions to be investigated. While we may attach different degrees of plausibility to the conclusions of abductive inferences, this is largely independent of their functional position as the first step in inquiry. We must, Peirce says, think of the conclusion of an abductive inference as plausible enough to be 'a question meriting attention and reply', but the purpose of abduction is not to establish a belief (EP2:441, 1908).[70] This is distinct from IBE, where our aim is to assign some positive credence to the explanation we pick out as 'best'. The conclusion to such

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[67]This was discussed in Chapter One.

[68]A similar proposal is suggested in Andow 2016.

[69]This discussion closely follows Williamson's summary of what he takes IBE to be (c.f. Williamson 2016, p. 266). Williamson's only reference to 'pragmatism' in the paper aligns it with anti-realism (Williamson 2016, pp. 277-8).

[70]The citations from used from 1908 here are from 'The Neglected Argument for the Reality of God', where Peirce uses the term 'retroduction' instead of 'abduction'. The secondary literature on Peircean abduction often highlights the idea that abduction results in an interrogative (e.g. Hintikka 2007; Hookway 2012c).

an inference need not have the functional role that Peirce assigns to abductive inferences.

Campos suggests that Peter Lipton, the philosopher who coined the term IBE, mixes together the creation of a new explanatory hypothesis with the evaluation of the hypothesis. This is, Campos argues, to confuse induction and abduction (Campos 2011, pp. 440–441).[71] This may be true of Lipton, but it is not true of Williamson, who explicitly takes IBE to require us to already have a list of relevant hypotheses in hand. Williamson's version of IBE is, in Peirce's terms, a form of induction or 'probable inference'.[72] Ironically then, Williamson's IBE includes deductive and inductive stages, but does not involve abduction at all.

The functional role of abductive inferences is to introduce new ideas to be tested. This suggests that abduction should be connected with creativity and the 'context of discovery'.[73] We need not deny that the IBE pattern that Williamson presents is part of Peirce's methodology for metaphysics and for philosophy in general. However, it is less important than the use of abduction to generate new ideas.

Peirce does not draw a hard and fast distinction between the context of justification and the context of discovery (c.f. Chapter One §2.1). Abduction, while involving unformalisable creative input, is subject to logical criticism. Just as we can be more or less diligent observers, we can be more diligent explainers. In both cases there is something uncontrollable. No matter how diligently I observe the scene in front of me, I cannot control the fact that what I see is a computer screen. In abduction, there are equivalently uncontrollable moments of seeing that 'so one might conceivably reason' (EP2:233, 1903).[74] In such a situation, some new option strikes you. You are not compelled to adopt the given hypothesis, but you cannot 'unsee' that it is an available option. There is a compulsion here that is at least analogous to the perceptual case. Nonetheless, some self-control is possible in both of these processes. We can, for instance, put ourselves in the kind of circumstances that are conducive to the imaginative work of abduction.[75]

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[71] A related argument is made in Mcauliffe 2015.

[72] See also: McKaughan 2008; Staat 1993; Turrisi 1990; Anderson 1986; Frankfurt 1958.

[73] This connection with creativity can be brought out in various ways. For instance, Mark Tschaepe emphasises the importance of 'guessing' as a part of abduction, and draws this out by close attention to the history of the study of AIDS (Tschaepe 2014).

[74] In fact, Peirce thinks of abduction and perception as 'shading' into one another (EP2:227, 1903).

[75] Peirce's account of musement, where we engage in 'free play' of the imagination, might answer to this description (c.f. Anderson 1995, pp. 145–150; Salas 2009).

3 Two Options for Peircean Metaphysics

3.1 Contextualist Peircean Metaphysics

Peircean metaphysics offers explanations for the possibility of the success of inquiry. This section considers how this project might look if our only notion of success in inquiry is the context relative account of truth. My presentation of this option closely follows the work of Hookway, who defends a version of this contextualist approach to metaphysics. We saw previously that a merely contextualist understanding of Peirce on truth is in tension with the idea that philosophy ought to be cenoscopy. This tension will carry over when we think of the relationship between the two proposal for Peircean metaphysics on offer here. In particular, this option is not able to follow Peirce in methodologically deploying the realistic conception of reality ascriptions.

We saw in the previous chapter that Hookway's account of Peirce on truth centrally involves the notion of convergence. Hookway takes the 'pragmatic elucidation' of the truth of some proposition p to be that those who inquire into whether or not p is true, using appropriate methods, would eventually converge on a stable belief that p. Here stability means that the belief would not be overturned by further evidence or inquiry (Hookway 2000b, p. 49). The demand for metaphysics, on Hookway's view, comes when we attempt to provide some explanation for our converging on a given belief or set of beliefs. The contextualist element of this approach is that it allows distinct kinds of explanation for different areas of inquiry. The upshot of this is that the form that our metaphysical explanation of convergence takes can appeal more or less to our particular context. For instance, we might want to explain the convergence seen in the natural sciences with a fairly robustly mind-independent story; while explaining what convergence we take to be available in moral matters in a different way. We will not attempt to provide a story that might apply across all contexts or to provide a standpoint (even as an unreachable ideal) that allows for a total picture of the relations between contexts.

As so far described, this does not quite match the abductive pattern presented above. I have presented Hookway's Peirce as seeking to explain how we have come to converge on beliefs in certain areas and not in others. Here the two contexts in question are the rather vaguely characterised contexts of moral discourse and natural scientific discourse. In the latter context it seems that we have successfully converged on certain beliefs. In the former we seem to have been less successful.

This suggests that what Hookway's Peirce is attempting to explain here is success (convergence) that inquiry has already obtained. This would not follow the pattern for Peircean metaphysics set out above. As presented above, Peircean metaphysics aims to provide us with a story which tells us how reality might be if further success in inquiry is possible. It does not aim to provide a *post hoc* explanation for success already obtained. This would be a misreading. In so far as Hookway's Peirce offers a kind of traditional scientific realism (even an 'object naturalism') it is an explanation of both already obtained success in the natural sciences *and* of the possibility of further success in that context.

Hookway takes his account of Peirce on truth to be 'metaphysically neutral' (Hookway 2000b, p. 80). While convergence in some context may demand an explanation, this demand does not determine what form the explanation must take (Hookway 2000b, p. 75). In Hookway's words:

> [Peirce's view of truth] can be held in conjunction with a realist or an anti-realist metaphysics. The most plausible view may be that some truths can be understood in a 'realist' manner, as dealing with a mind-independent reality, while others deal with matters whose character bears more marks of our interests, sentiments or constructive activities. (Hookway 2000b, p. 77)

That is, in so far as there is convergence in our various inquiries, we might expect different kinds of explanation to be appropriate in different cases. Hookway takes it that there might be room for some robust notion of mind-independent objects when characterising the convergence of scientific inquiry, while in the case of ethics or mathematics some other explanation might be appropriate (Hookway 2000b, p. 76). What kind of explanation will be appropriate will depend on our story about inquiry into the subject matter in question.[76]

The 'realism'/'anti-realism' opposition introduced by Hookway here will need to be slightly modified. This can be done without undermining the metaphysical neutrality of his position. Later in the same paper, Hookway entertains, but rejects, the thought that what he calls 'basic realism' can be adopted with respect to any proposition we take to be true (Hookway 2004, p. 142). Basic realism is realism in the sense that Peirce ascribes to Scotus before he distinguishes between the nominalist and realist readings. That is, something is real if it is as it is independently of what we think of it. Anything that is true, even in the context relative

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[76]We might distinguish the contexts in which different kinds of metaphysical explanation are appropriate by appealing some something like Misak's idea that the extent to which bivalence applies to a subject comes in degrees.

sense, is real in this 'basic' sense. Anyone in the relevant circumstances would converge on the true belief. This does not make the truth of the belief dependent on what you or I or any number of actual inquirers think (c.f. CP6.237, 1909). This notion of 'reality' is flexible enough to allow reality to be ascribed to something which 'persons of a given general description would think under supposable circumstances' (CP6.237, 1909). It also allows explanations which make the objects in question either 'internal' or 'external'.[77] That is, it allows for more or less ontologically demanding explanations to be given.[78]

I depart from Hookway by straightforwardly endorsing the claim that the truth of *p* implies basic realism about *p*. Hookway's argument for drawing the two notions apart turns on the example of the 'charismatic moralist'. We are to imagine that a particularly charismatic moralist appears amongst us and by sheer force of personality establishes a conception of the moral life that is so strong that no further reflection can shake it. We might imagine some super-charismatic figure introducing the view that it is always and everywhere wrong to wear blue clothing. By the sheer power of their rhetoric, no person who hears their message can think otherwise. In this case, the moral belief that it is always and everywhere wrong might be stable even though it depends on how some particular person thought. This is made clear by Hookway's addition that if some other moralist had come along, different beliefs would be unshakeable (c.f. Hookway 2004, p. 140). For instance, if some other charismatic moralist had appeared instead, perhaps proclaiming that it is always and everywhere wrong to wear red, this belief would become unshakeable instead . In this case, Hookway thinks, we would have truth without basic realism .

Hookway's basis for this argument is a distinction between the concepts of truth and reality as presented in *Baldwin's Dictionary*. We saw there that Peirce aligns truth with the 'ideal limit' of inquiry and reality. Peirce goes on to characterise reality in much the same way as above. He holds that '[r]eality is that mode of being by virtue of which the real thing is as it is, irrespectively of what any mind or any definite collection of minds may represent it to be' (CP5.565, 1902). Peirce holds that there are distinct ideas, one of which is relevant to the logician, the

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[77]Something is real if its properties do not depend on what any person or group of people thinks *about it*. Something is 'external' if its properties do not depend on what any person or people think about anything. Something is 'internal' if it is not external, and is a 'figment' if it is not real. (CP6.237-8, 1909).

[78]These issues are dealt with especially clearly in: De Waal 1996 and Mayorga 2007.

other of which is relevant to the metaphysician. This distinction can be maintained even if we hold that there can be no truths without at least basic realism.[79] Our account of the contextualist notion of truth takes the converged-on belief to be mind-independent in the sense of basic realism. That is, if the moral belief depends on one particular moralist appearing rather than another, then it is not a true belief (even on the contextualist understanding of truth developed in the previous chapter).

Despite entertaining the thought that truth and basic realism might come apart, Hookway does not think that aligning the two would make truth any less metaphysically neutral. It will still be the case that taking p to be true does not demand any particular metaphysical treatment of the objects of p. For instance, Hookway suggests 'basic realism' about numbers can be derived from the claim that 'there really are prime numbers between two and ten', and that this leaves open most of the metaphysical questions that philosophers of mathematics have asked about mathematical objects (Hookway 2000b, p. 142).[80] This would include all sorts of questions about the nature of numbers, and what kind of creature might come to use numbers, and indeed, the extent to which we might think of mathematical objects as constructed. More generally, we might go for 'more robust' varieties of realism if we take a given subject matter to be open to investigation by creatures with quite different natures than us. Perhaps we imagine that convergence between ourselves and some alien species on fundamental physics to be likely, while imagining that they were unable to participate in inquiry into issues of human phenomenology.

Some examples of metaphysical work motivated by a desire to explain convergence-in-context will be of use here. We can understand some features of the cosmological arguments outlined above as following this pattern. We take there to be fairly robust convergence available in the physical sciences, and want to explain it. The 'context' in question is sufficiently shared that our explanation for conver-

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[79]Peirce goes on to say that if we take the impact of the charismatic moralist to introduce a moral ideal that no further reflection can shake, the logician can announce the ideal 'true'. The metaphysician then 'may hold that the fact that the ideal thus forces itself upon the mind, so that minds in their development cannot fail to come to accept it, argues that the ideal is *real*' (CP5.566, 1902). I take this claim to be merely highlighting the difference in role of the metaphysician and the logician rather than seriously entertaining the view that there can be truths that depend on what you or I or any particular collection of people think about the matter in question.

[80]The use of this example and appeal to a metaphysically neutral account of 'real' suggest affinities between basic realism and recent work by Amie Thomasson on 'easy ontology' (Thomasson 2015).

gence should not rely on the inquirer in question being say, a member of the human species, or enculturated in a particular way. One metaphysical explanation for the possibility of successful convergence on broad results in the physical sciences is hard determinism. Peirce took this to be a bad explanation, and offered his own in its place. For one thing, determinism did not sit entirely well with the new reliance on statistical explanations in both Darwinian evolution and thermodynamics. For another, even the success of deterministic laws need not imply that reality itself is *entirely* law governed. Rather, we need only think that reality is sufficiently regular that the measurable features of events are close to those predicted by law.[81] On this alternative conception, we acknowledge the concept of chance as not merely necessary to cover up areas in which we are ignorant. We shouldn't, Peirce thinks, attribute our need to use statistical explanations simply to a lack of knowledge of an underlying, deterministic, pattern of events. Peirce thus rejects a metaphysical explanation of the possibility of successful scientific inquiry (that the world is deterministic), in favour of a weaker conception of what explains the possibility of scientific inquiry converging on certain results (that is, that the world exhibits certain more-or-less stable statistical regularities that need not stay entirely fixed over time).[82]

We might offer a different explanation of convergence in the case of ethics. Whereas we take the relevant context for inquiry into physical cosmology to be available to a fairly wide range of possible inquirers, we need not take the same to be true in ethics. On Peirce's view of action, it is largely a matter of dispositions to behave in certain ways. In so far as we are in control of the shape of these dispositions, we are liable to ethical criticism (e.g. EP2:337; CP5.533). The main questions of ethics are, on this model, questions about the evaluation of certain dispositions, and their development in the course of ongoing inquiry. We might then differ about how dependent on contingent features of the human condition

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[81]As Peirce puts it:

> Try to verify any law of nature, and you will find that the more precise your observations, the more certain they will be to show irregular departures from the law. We are accustomed to ascribe there, and I do not say wrongly, to errors of observation; yet we cannot usually account for such errors in any antecedently probably way. Trace their causes back far enough, and you will be forced to admit they are always due to arbitrary determination, or chance. (W8:118/EP1:305, 1892)

The departure of our measurements from those predicted by law can then be attributed to a degree of absolute chance as well as to errors in our own observations.

[82]The main text in which Peirce develops these arguments is 'The Doctrine of Necessity Examined' (W8:111–125/EP1:298–311, 1891), but see also 'A Reply to the Necessitarians' (CP6.588-618, 1893). More generally, Peirce's arguments against the Millian assumption of the uniformity of nature are also relevant (e.g. W1:420–423/CP7.131–138, 1866).

the development of these dispositions is. For example, we might take the development of these dispositions to be constrained by our nature as rational beings.[83] If, on the other hand, we take these dispositions to be largely constrained by our being creatures stuck with certain contingent attitudes, then we might offer something in the ball park of contemporary naturalistic stories about ethics.[84]

As an interpretation of what Peirce is attempting when he turns to metaphysics, the contextualist proposal runs into some trouble. We have seen that Peirce hopes for metaphysics to provide an account of both the '*omni*' and the '*totum*'. A piecemeal contextualist approach might achieve the first of these aims. That is, it might provide a distinct account of what it is about the world that enables us to converge in each area in which we inquire. This would provide an account of all things (the *omni*), but it would not give an account of how all of those contexts fit together in a coherent story (the *totum*). This, in turn, raises doubts about the extent to which this approach can achieve the aim of cenoscopy: to provide an account of project of inquiry that would apply to any possible inquirer. For there to be an informative story about what any possible inquirer must take to be true, or of the norms of argumentation that would apply to any possible inquirer; then we should hope that there is some metaphysical story to be told about the shared world into which these inquirers are inquiring.

Moreover, this approach does not have much room for the transition from logic to metaphysics. It does, of course, take on a conception of truth as convergence in a context. But it doesn't do anything like projecting a logic onto the world. The shift from 'regulative laws of logic' to 'laws of being', or from 'logical conceptions' to metaphysical ones does not feature in the method by which we generate metaphysical hypotheses. Nor do we achieve the kind of modal strength that it seems that Peirce sometimes wants from his metaphysics. In order to get these things we will need to add something like the notion of absolute truth. In addition, we will see in the next chapter that, while the contextualist approach can withstand some

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[83]This would lead us down a Kantian road. Peirce's own approach is something like this (e.g. EP2:202–203, 1903).

[84]This would not make ethical truths any less truthful—any possible inquirer of a given description would converge on the results in question. This would not make the truths in question depend on what any particular person or group of actual people think. This is realism, although of a sort that relies on there being a perspective from which we can talk about possible inquirers who do not fit the given description. Compare Peirce's account of the reality and externality of colours (e.g. CP6.327, c. 1893).

of Price's recent anti-metaphysical arguments, the absolutist conception is more successful.

3.2   Absolutist Peircean Metaphysics

If we adopt Peirce's account of absolute truth in addition to the contextualist notion, we will end up endorsing a different approach to metaphysics. Like the contextualist proposal just considered, we will continue to look for an explanation of the possibility of successful inquiry. However, the relevant notion of success will change. Recall from the previous chapter that the notion of absolute truth is intended to push us beyond any particular context towards something more general. At the very least, we will want some account of how the uses of a concept in various contexts fit together. This was motivated, in part, by a series of regulative hopes for inquiry.

If we directly took over the account of Peircean metaphysics that we have just considered and added the absolutist notion of truth, we would ask how reality would have to be for the absolute truth to be attainable. This is almost the right idea. The problem is that, according to Peirce, we should not think of the absolute truth as attainable. Rather, it functions as a limit concept. On this account, no inquirer, or community of inquiry, could ever possess the absolute truth. Such inquirers *will* however, be able to possess all sorts of truths in the everyday sense. So we instead ask what reality would have to be like in order that inquiry could successfully approach the absolute truth. This would require us to say, of any particular lacunae or failure in inquiry, that the problem can be overcome. It would not, however, require us to think that any particular inquirer or community of inquiry could possess the absolute truth.

It is worth noting that the idea of an explanation here might seem a little odd. If I were, say, explaining how I was successful at walking the dog last night, I could point to all sorts of enabling conditions: the weather, the fact that I got home in time, the fact that the lead didn't break, and that I remembered to bring some plastic bags with me. In this kind of case, the success is already achieved and we are looking to tell a story about how it came about. In the case of inquiry, at least if we adopt the absolute truth as an ideal, the success that we are looking to explain

is never fully achieved. What we are looking to explain, then, is the possibility of success.[85]

The ideal introduced by the notion of absolute truth is unitary and embodies our best present account of what must be admitted by any possible inquirer. The inquirer adopts, as a norm of their activity, the hope that there is an answer to any meaningful question they inquire into and a possible resolution of any dispute in which they are engaged. This requires that there is something to be said about the success of inquiry over and above success in a context. There must be a perspective from which a general story can be told. Absolutist Peircean metaphysics attempts to tell it.

The realist conception of reality ascriptions works naturally with the absolutist proposal. If we take reality to be cognisable, then we can read features of our logic onto our metaphysics. This distinguishes the approach from the contextualist one. Unlike the contextualist approach, the absolutist approach makes methodological use of the realist conception of reality ascriptions. As Parker glosses the characterisation of reality that Peirce offers, it is 'defined as what *would* be represented in a perfect argument, at the end of infinite inquiry in to the nature of the world' (Parker 1998, p. 185). So, for instance, our conception of reality, as that which would be discovered at the end of inquiry, becomes the notion of the proposition which includes everything. This is the 'the fact that is not abstracted but complete' (EP2:304, 1904). We take the reality we are now interacting with to be identical (in so far as it is real) with that ideal, unabstracted, proposition. This is the metaphysical part of the story about absolute truth that was told in the previous chapter.[86]

This proposal is not set up in opposition to contextualist stories. Rather, it opposes *merely* contextualist stories. It may be that different local stories are needed in different places, but there will still be *something* global to say. The Peircean opponent of this story might point to Peirce's claim that, in inquiry:

> We must [. . .] be guided by the rule of hope, and consequently we must reject every philosophy or general conception of the universe, which could ever lead to the conclusion that any given general fact is an ultimate one. We must look forward to the explanation, not of all things, but of any given thing whatever. There is no contradiction here, any more than there is in our holding each one of our opinions, while we

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[85]The claim that metaphysics is unavoidable then becomes the claim that we always have some such explanation operative, either explicitly or implicitly, when we engage in inquiry.

[86]Recall that Peirce holds that border between logic and metaphysics to be hard to draw once we get to thinking about the ideal for inquiry.

are ready to admit that it is probable that not all are true; or any more than there is in saying that any future time will sometime be passed, though there never will be a time when all time is past. (EP1:275–276, 1887–1888)

The picture being defended here does not hold that any given general fact is an ultimate one. But, more importantly, we do not 'look forward to' the explanation of 'all things'. This is because Peirce's conception of the absolute truth is a limit notion, rather than something ever actually possessed or achieved. However, this ideal does make sense of the idea that we could hope for the explanation 'of any given thing whatever'.

Is this proposal just giving free reign to wishful thinking in metaphysics? This is a traditional complaint against the pragmatists.[87] The case of the adoption of rational hopes in inquiry is slightly different however, since it is taken up in order that we can make sense of the practice of thinking. As Parker puts it: '[w]ithout faith in the ideals of Truth and Reality, an honest commitment to rational thought would not be possible. They are postulates, requisite for any coherent attempt at inquiry' (Parker 1998, p. 186). In so far as something like Peircean metaphysics makes sense of the practice of thought, giving it up would be more like giving up thinking than giving up merely wishful thinking. Of course, this depends on how successfully the Peircean shows that the features they put into their metaphysics are indeed necessary for making coherent sense of the practice of inquiry.

The absolutist conception of Peircean metaphysics then offers an account of what any world in which inquiry could be successful must be like. Here, success is understood in terms of the notion of the absolute truth. The notion of the absolute truth is, in turn, adopted as an account of the ideal for inquiry which can be adopted on the basis of experience available to any possible inquirer.

Conclusion

In this chapter, we have considered Peirce's conception of the role of metaphysics as it sits within the hierarchy of the sciences and as a discipline characterised by the use of abduction. We began with a review of Peirce's account of metaphysics in its relation to the other sciences. Peirce takes theoretical philosophy to be cenoscopy, the study of that which is available to any possible inquirer, and metaphysics to

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[87]A compact summary of criticism of pragmatism on this score can be found in Misak 2016b, pp. 466–468.

be the 'completing department of cenoscopy'. We attempted a reading of Peirce's account of metaphysics that remained true to both the relationship between metaphysics and the idioscopic science and the relationship between metaphysics and the rest of philosophy. I argued that the two relationships can be held together by a focus on the abductive character of metaphysics.

Having set out the basic pattern of Peirce's account of metaphysics and its role in the sciences, I then offered two proposals for a contemporary Peircean method in metaphysics. One, corresponding to the contextualist account of Peirce on truth, was derived from the work of Christopher Hookway. According to this proposal, the aim of metaphysics is to offer hypotheses that might explain why inquiry is successful in a given context. The success in question is evidenced by convergence in belief across difference inquirers in the same context. I suggested that this proposal does not necessarily count as cenoscopy or make as much use as Peirce does of his realist conception of reality ascriptions. I then presented a conception of Peircean metaphysics that corresponds to absolutist account of Peirce on truth. According to this proposal we are to offer hypothetical explanations for the success of inquiry on the basis of a fully cenoscopic logic. Such explanations will take the form of an account of how reality must be if it is to be the object of successful inquiry.

Chapter 5

Peircean Metaphysics and Contemporary Pragmatism

Introduction

In the previous chapter I presented two proposals for Peircean metaphysics: the contextualist and the absolutist. The two proposals share an abductive focus. Both are interested in offering explanations for success in inquiry. However, the two proposals diverge in both their methods and conclusions. Only the absolutist proposal fully adopts Peirce's cenoscopic orientation. As a result, only the absolutist proposal uses the realist conception of reality ascriptions as part of its methodology or derives necessary conclusions on the basis of claims about any possible inquirer. In this chapter, I critically compare these two proposals for Peircean metaphysics with work in contemporary pragmatist philosophy.

I begin by introducing the basic form of Price's pragmatist rejection of metaphysics (§1). This rejection of metaphysics turns on a rejection of representationalism. This rejection is a result of Price's subject naturalism. Price holds that linguistic-anthropological stories can be told about all concepts of philosophical interest without the introduction of representational notions. Price holds, in addition, that some kind of globally-applicable representationalist notion would be necessary in order to motivate either affirmative or negative metaphysical judgements. Price thus endorses a form of metaphysical quietism.

The contextualist proposal for Peircean metaphysics can make some progress against Price's anti-metaphysical arguments (§2). Recall that Hookway's contextualist approach demands an explanation for the possibility of convergence in a

given context of inquiry. Hookway takes the mere fact of convergence to be 'metaphysically neutral'. Various metaphysical stories are then available to explain convergence. Metaphysics is not, on this picture, motivated by deploying a metaphysically loaded (representationalist) conception of truth. However, the Pricean can respond by claiming that all necessary explanation of convergence can be done by means of linguistic anthropology, and that, in fact, no context will require either the affirmation or denial of metaphysical claims. In Price's recent work, he introduces a merely-local notion of representation (e-representation). Price then claims that there is no language which is purely e-representational. That is, there is no form of language which could, absent the adoption of some contingent 'practical stance', be used to make either affirmative or negative reality claims.

In order to more fully challenge Price's position, I turn to the resources made available by the absolutist conception of Peircean metaphysics. In particular, I charge Price with adopting the nominalist conception of reality ascriptions. The Peircean expects that it will be possible to diagnose uncriticised metaphysics in anyone who claims to do without it. Price's adoption of the nominalist conception is, then, one such case. In addition, I argue that recent exchanges between Price and Robert Brandom over the status of dispositional/causal modality offer an open door for the absolutist conception of Peircean metaphysics (§3). In particular, Brandom seems to be deploying something like Peirce's realist conception of reality ascriptions.

1   Price's Pragmatist Rejection of Metaphysics

David Macarthur and Huw Price characterise pragmatism with an equation:

> Pragmatism = linguistic priority without representationalism (Macarthur and Price 2007, p. 97).

They argue that pragmatism, so understood, should lead to metaphysical quietism. That is, pragmatism should lead us to simply cease asking metaphysical questions. Many of the premises for Price and Macarthur's respective versions of this argument have been considered in previous chapters.[1]

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[1]In this section I will focus my attention on the form of the argument that has been developed by Price in later writings. The account of Macarthur's differences with Price developed in Chapter Two should be sufficient for the reader to infer what Macarthur's version of the argument would look like.

Linguistic priority is a claim about the origins of 'placement problems'. Placement problems arise when we seem to have some commitment that we struggle to 'place' with respect to some privileged ontological or epistemological framework. Price is particularly interested in cases where that background framework is naturalistic. So, for instance, we struggle to place moral facts or the concepts deployed by folk psychology with respect to (what we take to be) the results of the natural sciences (e.g. Price 2013, pp. 6–7). This could take the form of either privileging a particular 'scientific' ontology or endorsing an epistemological thesis such that only the methods of the natural sciences (or some particular natural science) produce genuine knowledge.[2] Price takes it that placement problems are the primary motivators for contemporary metaphysics.

Price holds that we can either take placement problems to begin with material or with linguistic data (Price 2013, p. 7). That is, we might take ourselves to be directly acquainted with moral facts, or beliefs, or desires and then puzzle over their naturalistic status. Alternatively, we might take our puzzles to begin with the fact that we talk and think in terms of moral facts, beliefs, and desires and then wonder how the referents of these vocabularies (or concepts) could fit within a naturalistic framework. Linguistic priority is the claim that we should take the linguistic approach to the origins of placement problems. In Macarthur and Price's formulation, we begin 'with *linguistic* explananda rather than *material* explananda; with phenomena concerning the *use* of certain terms and concepts, rather than with things or properties of a non-linguistic nature' (Macarthur and Price 2007, p. 95).

Price takes it that all contemporary analytic philosophers should adopt linguistic priority.[3] Price's pragmatist is differentiated from the metaphysician by rejecting representationalism. Price characterises the 'representationalist assumption' (about language) as '[r]oughly...the assumption that the *linguistic* items in question [in a placement problem] "stand for" or "represent" something *non-linguistic*' (Price 2013, p. 9). The representationalist deploys 'substantial semantic properties or relations', namely, ones which allow us to turn claims about language

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[2]As argued in Chapter Two, neither of these options would be acceptable to Peirce.

[3]Price offers a series of arguments based on the current landscape of debates in analytic philosophy. For instance, quasi-realism wouldn't even be an option within metaethics if philosophers didn't, at least implicitly, think that the problems are problems about understanding the language we use rather than some object which we are already acquainted with (e.g. Price 2013, p. 8). He also mentions the importance of semantic notions in defending metaphysical theses, including various forms of naturalism. These would only work, Price thinks, if our problems begin with language (Price 2011, pp. 265–266; Price 2013, pp. 17–19.

into claims about the world (c.f. Price 2013, p. 10). Price also characterises substantial semantic relations as those that play a role in theoretical explanations (e.g. Price 2013, p. 153). The representationalist, when asked to explain why we use certain vocabulary, can respond by saying that the vocabulary *represents* some set of objects in the world. By invoking representation as an explanatory notion, the representationalist has moved from 'words' to the 'world' c.f. Price 2013.[4] Two substantial semantic notions stand out as particularly important for Price: reference and truth.[5]

Price offers a metaphor to characterise the representationalist conception of language. He asks us to imagine a child playing a game with a sticker book. The child has a collection of stickers on the left page and a collection of outlines which match the stickers on the right page. The child aims to place the stickers within the appropriate outlines. In this metaphor the stickers are the statements we take to be true, and the outlines the states of affairs that make those statements true. The representationalist takes the function of language to be something like the sticker game. We aim to make true statements and understand statements to be true by virtue of 'matching up' with the world (Price 2011, pp. 3-4). On this understanding, we can move from a claim about a piece of language, say 'p is true' to a claim about the world, that there is some state of affairs that corresponds to p in some way or other.[6]

The alternative, deflationary, account of semantic properties and relations does not take them to carry this weight. So, for instance, saying 'p is true' does not add anything to the assertion that p. Likewise, saying that 'x refers to o', is simply another way of talking about o (Price 2013, p. 9). In neither case do we move from a claim about language to a claim about the world. Such semantic notions will play no theoretical explanatory role. Price uses the terms 'deflationism' and

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[4]Note, as well, that some naturalists take the only legitimate variety of explanation to be causal explanation. If a naturalist of this sort uses a substantive semantic notion, it will have to play a causal role linking the language user with some object in the world. In this case, it is quite obvious how we get from the 'explanatory' characterisation of substantiveness to the 'word-world connection' characterisation.

[5]Strictly speaking, these are two notions that are usually used as substantive relations. Price's account of truth, introduced in Chapter Three, is not substantive in this sense. We will see in a moment that Price's 'i-representation' is intended to be a non-substantive notion of 'representation'.

[6]The 'way' will depend on the particular variety of representationalism in question.

'anti-representationalism' to refer to the claim that we should reject substantial semantic relations in our theorising about language.[7]

Given the explanatory weakness of deflationary notions of truth and reference, Pricean pragmatists must offer accounts of our various vocabularies couched in different terms.[8] Price suggests that this can be done under the heading 'linguistic anthropology' (Price 2013, p. 148). As we saw in Chapter Two, the linguistic anthropologist accounts for a vocabulary in terms of its function in the lives of language users understood as 'natural creatures in a natural environment' (e.g. Price 2013, p. 19). Price's account of truth, considered in the previous chapter, is an example of this method. These explanations, will not need, Price thinks, to appeal to any substantial semantic relations.[9]

Price does not offer a detailed characterisation of what he takes metaphysics to be. However, we can infer a lot from the arguments he offers against it. For instance, Price takes his 'linguistic anthropology', couched in the language of the natural and social sciences, to *not* be metaphysical. For instance, to say that ethical language allows a certain kind of natural creature to cooperate in activities that they need to carry out to survive may invoke certain objects (the creatures, their environment). But this would be to offer a bit of biology rather than metaphysics. So metaphysics must be, for Price, something over and above the sciences that are involved in linguistic anthropology. Metaphysics must also be concerned with mind-independent objects, since Price takes the revelation of ways in which some vocabulary depends on contingent features of ourselves and our environment to remove the temptation to ask metaphysical questions about that vocabulary (c.f.

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[7]This usage is at odds with some discussions of deflationism, which have a different notion of 'substantial' in play. For instance, Misak has argued that Peirce is not a deflationist because he has a lot to say about the property truth in terms of its connection to notions of inquiry, evidence, etc (Misak 2007, pp. 70–71). This is to take 'non-substantial' to preclude such a connection. Similarly, Howat has suggested that the Peircean might agree with the deflationist that there is no substantive semantic story to tell about 'truth', but argue that there is a substantive story to tell about the pragmatics of 'truth' (c.f. Howat 2014, pp. 373–374, 377). Price would not count as a deflationist about truth on either Howat or Misak's approach. It should also be noted that some discussions of Peirce's relationship with deflationism are concerned with placing Peirce's position as a third way between deflationary and ontological accounts of truth (c.f. Legg 2014a, p. 207).

[8]Deflationary notions of truth and reference cannot be used in explanations for why we come to talk in given ways because they make it trivially true that, say, true propositions refer. We are not then told anything by the claim that, say, declarative language aims to represent the world.

[9]We will see in a moment that Price slightly weakens this requirement in more recent work (§2). However, he does not do so in a way that allows for the *global* use of substantive semantic relations.

Price 2013, pp. 62–63). Price is here deploying a certain way of characterising 'real' or 'real object'. We will return to this question later (§3).

We are now in a position to understand the basic form of Price's argument that pragmatists should be metaphysical quietists:

1. We can explain our linguistic behaviour, and thus discharge all of our 'philosophical debts', without the use of substantial semantic relations (e.g. by Price's 'linguistic anthropology') (c.f. Price 2013, pp. 19, 181).

2. The use of substantial semantic relations in our philosophical theories leads to serious problems. At best, we will be left with a long list of intractable 'placement problems'.[10]

3. Therefore: we shouldn't use substantial semantic relations in our philosophical theorising.

4. Metaphysical questions can only be answered by either asserting or denying that some substantial semantic relation holds of some linguistic item.

5. Therefore: we should abstain from metaphysical questions. That is, we should become metaphysical quietists.

The contextualist approach to Peircean metaphysics can challenge Price by denying premise (4). That is, explanatory questions about convergence in belief can be motivated without already adopting some metaphysically loaded conception of representation. However, we will see that the absolutist proposal enables a more radical rejection of this form of argument. In particular, by adopting the cenoscopic orientation rather than the perspective of the linguistic anthropologist, we can both diagnose metaphysical assumptions in Price's argument and defend substantive metaphysical positions of our own.

2   Contextualist Peircean Metaphysics and 'Representationalism'

Peirce's contextualist account of truth, via Hookway, is not 'substantive' in the sense set out by Price. To say something is true, on Peirce's account, is to say

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[10]There are more serious worries for naturalists though, in so far as naturalism can be argued to be incompatible with the substantial relations which the representationalist depends on (c.f. Price 2013, pp. 13–16).

something about, if not language narrowly construed, then about the practice of inquiry. It is then a further question how we explain what convergence there is in those practices. There is no automatic move from claims about the truth of propositions to any particular kind of metaphysical explanation.[11] In Price's language, 'linguistic anthropology' might leave room for metaphysical questions cashed out in terms other than those of substantial semantic relations. In particular, the contextualist Peircean story is not one where we have to find a certain kind of object that *makes p* true for every true *p* (c.f. Legg 2014a, p. 207). To endorse such a view would be to prioritise the starting point of inquiry rather than the final opinion, and thus to adopt the nominalist conception of reality ascriptions.

The move from 'language narrowly construed' to 'the practice of inquiry' may raise worries about linguistic priority. It may seem that this is simply to adopt the material conception of placement problems. I don't think that Price should be worried though. We can maintain the spirit of linguistic priority while abandoning the letter. The linguistic conception starts with our use of language or concepts, and this usage occurs within the context of various practices that include non-linguistic elements. Price thinks, for instance, that the linguistic problems that he takes to motivate philosophy can equally be raised by asking what role the term '*X*' plays in our lives or asking what function the concept *X* performs for us (Price 2013, pp. 7–8). Consideration of some piece of language pushes us directly to consideration of our practices more broadly construed.

In this connection, we might also consider the role that various concepts play within the practice of scientific experimentation. At least half the work of any natural scientific experiment will be preparation. This will involve the application of more or less sophisticated concepts. Similarly, the results will only be meaningful in so far as we can interpret them using certain (perhaps distinct) concepts. On the classical pragmatist story the conceptual phase of the experiment and the active phase (actually intervening in the world) can not be cleanly divided from one another. Moreover, to understand a concept is to understand the possible roles it could play in experimental interaction with the world.[12] Instead of starting with language use narrowly construed, then, we start with our 'conceptual practices'.

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[11] Recall that this notion of truth is 'metaphysically neutral'. There is no automatic move from, say, the capacity of a 'belief forever to withstand challenge' and any particular story about the relationship between beliefs and the world (Bacon 2012, p. 275).

[12] This is, of course, the pragmatic maxim.

This is not to adopt the 'material' conception of placement problems, since we do not assume any kind of unmediated acquaintance with the objects of our concern.

The Pricean response to the contextualist Peircean metaphysician would then be to deny that anything *metaphysical* is necessary for explaining our conceptual practices or the successful convergence that sometimes obtains within them. In other words, Price can hold that his non-metaphysical linguistic anthropology offers all the explanation of convergence one might need. Indeed, if all Price's stories about various local vocabularies are successful, he will have discharged the theoretical demands that motivate contextualist Peircean metaphysics, without having to actually engage in metaphysics.

An argument against Price would need to show that there is at least one case in which success in inquiry cannot be adequately explained without going beyond linguistic anthropology. The kind of 'local' stories that we would look to in order to find some counterexample to Price's claim might be, say, descriptive language including everyday objects like tables and chairs or the language of advanced scientific theories. This would involve the defence of a kind of local representationalism.[13] In such cases, we we can affirm the mind-independence of at least some features of the objects in question. Our best explanation for our linguistic practice won't have to refer to anything on 'our side' of the ledger. The thought would be something like the following from Blackburn:

> How come we go in for descriptions of the world in terms of energies and currents? Because we have learned to become sensitive to, measure, predict and control, and to describe and refer to, energies and currents. (Blackburn 2013, p. 79)

Price objects, on the basis of his linguistic anthropology, that there is no vocabulary from which contingent features of our 'practical stances' can be completely removed. However, in order to make sense of this claim we will need to consider some more recent developments in Price's anti-representationalism.

In recent work, Price has distinguished between two kinds of representation, and has diagnosed the problem with 'capital-R' representationalism as confusing the two notions. That is, rather than not using any representational notions, the Pricean pragmatist carefully deploys two (c.f. Price 2013, pp. 62–67). One of the clearest angles by which to see the distinction is to start with the difference between 'local' and 'global' levels of theoretical explanation.[14] In line with Price's

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[13]Something like this move is defended in both Brandom 2013 and Blackburn 2013.

[14]Price takes this approach in a few places (e.g. Price 2013, p. 153).

linguistic starting point, we can ask either 'global' questions about all assertoric language, or we can ask 'local' questions about some particular vocabulary or set of concepts. One representational notion appears at the global level. Price calls this notion 'i-representation', where the 'i' stands for 'internal'. I-representation is not a substantive semantic notion. Rather, it is a notion of representation in so far as it tells us what it takes for some bit of language to count as claiming or asserting something.[15] Price suggests various stories that could play this role at the global level. For instance, Brandom's account of assertions as playing roles in the 'game of giving and asking for reasons' (Price 2013, p. 32).[16] The details of this story are not important for us. All we need to note is that playing a certain kind of role in a social justification game need not *automatically* lead us from claims about that role to claims about 'the world'.[17] If the Pricean arguments developed in in the previous section work, then i-representation will not get us metaphysics.

However, we can also adopt a 'local' approach to the study of language. This will consist in stories about the function of particular areas of discourse. This will include, for Price, linguistic-anthropological accounts of the specific functions of modal, moral, mathematical, scientific, everyday observational vocabularies and so on. Consider, for example, the following two sentences:

1. 'The Loxley River is beautiful'

2. 'There are squirrels in the woods along the Loxley'

At the global level, we can say that both are equally i-representational. For instance, both can be used as reasons in deliberation and so count as propositions on the sketch of Brandom's position gestured to above. If someone asks why I am proposing that we go for a walk along the Loxley, I could offer either (1) or (2)

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[15]Or in other words, it tells us what gives a statement it's 'propositional shape' (c.f. Price 2013, p. 32).

[16]Another option for a global story would be to follow Michael Williams's proposal that 'if sentences are used in ways that respect the syntactic discipline of assertoric discourse, then they are used to make assertions and are as "truth-apt" as sentences get to be' (Williams 2013, p. 131). Price's also offers a 'uniform story about the defining common characteristics of declarative speech acts—a common story about what assertion is for, as it were. In the simple version...this story will say that assertions enable social creatures to express, revise and align behavioural commitments of various kinds' (Price 2013, p. 153).

[17]Nor would this notion of representation play any important role in our explanations of why we go about using certain vocabularies. We wouldn't start our explanation of why we use language with i-representation as an explanatory primitive. We, instead, build the notion of i-representation out of some story about reason giving or aligning behavioural commitments etc.

as a reason. However, at the local level, different stories will be appropriate for each. The first sentence includes the concept of beauty, about which we can tell many philosophical stories. Perhaps, for instance, we could say that the role of the concept is to enable expression of my appreciation for the river and my insistence that you appreciate it similarly. This explanation will not apply to sentences like (2). In attempting to explain (2) we seem drawn to more traditional representational notions.

Price introduces an environment-tracking representational notion, 'e-representation', which can be used in some local contexts. This would include an explanation of sentences like (2). Part of that story will involve some ability of the speaker to track the presence of squirrels in their environment. In e-representation 'some feature of the representing system either does, or is (in some sense) "intended to", vary in parallel with some feature of the represented system' (Price 2013, p. 36). Often, this 'covariation' will be causal. This is the kind of notion that a theorist would use in order to explain how I manage to, for instance, token 'squirrel!' pretty much exclusively the presence of squirrels. This kind of co-variation could also be required in the kind of explanation a biologist might offer for the possibility of a dog chasing a squirrel, or for a mechanic explaining the relationship between the fuel gauge on a car and the level of fuel in the tank (c.f. Price 2013, p. 36). This kind of causal relation need not be intentional in order to count as e-representation.

We might need e-representation in our local stories about scientific vocabulary or the language of everyday descriptions. If Price is right, then we will not necessarily need it to explain aesthetic language, and we will not need it globally. Price's stories about, e.g., morality or truth, do not appeal to any corresponding feature of the environment *tracked* by such language. But note that, unlike 'i-representation', 'e-representation' *is* a substantive semantic notion (Price 2013, p. 159). It turns our attention from words or concepts used by some creature, to the world, typically *via* some causal relationship. Similarly, it is needed as an explanatory notion. Part of our explanation about why we come to talk in terms of tables and chairs will involve an ability to track such objects in our environment.[18]

Price's anti-representationalism thus becomes the claim that these two notions of representation should not be confused with one another. Price characterises the

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[18]Recall that Price offers characterisations of what counts as a 'substantial' semantic notion both in terms of explanatory role and in terms of its enabling a shift in attention from 'words' to the 'world'.

distinction between two notions of representation as pulling apart a 'content' and a 'correspondence' assumption:

> The view I'm challenging can be thought of as a loosely articulated combination of two fundamental assumptions about language and thought. The first assumption (call it the content assumption) is that language is a medium for encoding and passing around sentence-sized packets of factual information—the content of beliefs and assertions. The second assumption (the correspondence assumption) is that these packets of information are all 'about' some aspect of the external world, in much the same way. For each sentence, and each associated packet of information, there's an appropriately 'shaped' aspect of the way the world is, or could be... The orthodox view bundles these two assumptions together (not recognising that they are distinct). (Price 2013, p. 40)

Price captures the 'content' aspect of thought and language with the notion of i-representation. The 'correspondence' aspect of thought and language is captured by e-representation.

It is not immediately clear from this why we cannot simply adopt the notion of e-representation in order to license metaphysics. We might simply claim that those objects which might be tracked in the environment are real and take an anti-realist attitude towards those concepts or propositions which are not to be understood in terms of environment tracking. We might say that there are really squirrels since they can be tracked in the environment, while there are not really facts about whether such and such a river is beautiful since we do not understand beauty in terms of environment tracking.[19] It seems that something like this could be adopted by the contextualist Peircean metaphysician. We could take our convergence in certain domains to be explained by the fact that there are external objects which we, and anything like us, have some capacity to track. In other contexts, say, when attempting to make ethical judgements, we need not invoke this kind of explanation.[20]

Price does not think that this kind of picture will work.[21] For e-representation to play this role, there would need to be a form of discourse that was entirely

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[19]This would be perfectly compatible with using the notion of i-representation to license the use of propositions about, say, aesthetics or morality is a quasi-realist fashion. We can understand why we talk as though there are moral facts in terms of the need for creatures like us to align their attitudes about certain behaviours without there being any moral facts to 'track'.

[20]This notion of reality would align with 'basic realism' if we decided that true convergence is only available in cases where there is the 'environment-tracking' notion of external constraint. It would be an additional notion of reality if we took there to be other possible explanations that underwrite convergence without undermining the objectivity of the belief converged on.

[21]The context of this debate is his understanding of himself as generalising Blackburn's 'quasi-realist' approach to modal and moral vocabulary to *all* assertoric vocabularies (see Blackburn 2013).

e-representational. This would enable us to pick out all the things that could be tracked in the environment absent any distortion from features of our language that are the result of merely contingent features of our situation as natural creatures. But Price denies that any such language exists. The best candidate for such a language is, Price thinks, natural scientific language. But we cannot take this to be purely e-representational because there is a non-representational linguistic anthropology available for core (perhaps irreducible) parts of scientific vocabulary.[22] These include both modal and general terms.

Price makes this argument in very compact form. Price suggests that a Blackburn-style modal quasi-realism shows how 'creatures in our situation would be led to develop a modal physics, even if they inhabited a non-modal world' (Price 2008, p. 89). Such an account might explain modal language in terms of our situation as decision making creatures with imperfect information concerning the future. On Price's understanding this would be a contingent 'practical stance' (Price 2013, p. 48).[23] Price points to similar considerations regarding the use of general terms. According to Price something like Wittgenstein's rule-following problem leads to the conclusion that the use of general terms requires us to adopt 'contingent, shared dispositions to "go on in the same way" in the *same* way' (Price 2013, p. 62). That is, there is no fact of the matter beyond these dispositions that determines whether the use of a given general term is correct. To have such a disposition, or to be able to take on such a disposition, is another practical stance. In so far as all scientific vocabulary deploys general and modal concepts it requires us to be able to adopt certain contingent practical stances. This excludes the possibility of metaphysical questions being formulated using the notion of e-representation. There is no purely e-representational language that enables us to speak of the world, even of the world as natural environment, absent the contingencies of our existence as natural creatures.

There are a few possible responses to this argument. For one thing, we could challenge the relevant bits of linguistic anthropology that Price relies on. Peirce has lot of things to say about both modality and the use of general concepts. We

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[22] In the background is a dispute over whether scientific language is necessarily modal. The basic idea behind this is that at least a large part of science is nomological—it is concerned with laws. We will consider these issues, and their connection with modality, in more detail when we turn to Brandom's exchanges with Price.

[23] Price defines a 'practical stance' as a 'practical situation or characteristic that a creature must instantiate, if the language game in question is to play its defining role in her life' (Price 2013, p. 48).

have already discussed Peirce's opposition to nominalism and acceptance of realism regarding both modal and general concepts. Here it is also worth noting that there are attempts to develop Peircean responses to rule-following arguments. For instance, Legg argues, using Peirce's categories, that we can make sense of a rule as having a phenomenal quality that can be recognised by its users across distinct applications of the rule (e.g. Legg 2003). This path could lead to a more traditional scientific realism. The difficulty with using Peirce's own metaphysical work for this project is that much of it is, as the last chapter argued, developed from the cenoscopic perspective, and with something like the absolutist strategy in mind.

There is room, at least conceptually, for a contextualist Peircean metaphysician to reject Price's form of naturalism without adopting the absolutist approach. While Price restricts his resources for constructing explanations to what is given by the account of human beings provided by biology and some social sciences, the Peircean need not be similarly restricted. There is thus room for challenging Price's conclusions on the basis of these additional resources.[24] For instance, we might attempt to present agreement across cultures regarding certain ethical principles as impressive and worthy of explanation. This might be enough to motivate some non-naturalist local story about ethics.[25]

Finally, we might adopt the absolutist variant of Peircean metaphysics and, concomitantly, the realist conception of reality ascriptions. Recall the sketch of a Peircean argument for the reality of universals: if reality is at the end of inquiry and all thought involves general concepts, then general concepts are features of reality. Price claims that the necessity of adopting some 'practical stance' for the concepts involved makes a metaphysical story about those concepts unavailable. I intimated above that this is a result of Price's adopting something like the nominalist conception of reality ascriptions and then denying that any such ascriptions can be either affirmed or denied. However, we've seen that a distinct conception of reality ascriptions is available to the pragmatist. On the realist conception of reality ascriptions, some concept only being available from the practical stance that must be adopted by any possible inquirer does not prevent us from adopting a realist attitude to it. In fact, it *encourages* metaphysical realism. In order to more

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[24]Price seems to dismiss this option out of hand while responding to Paul Horwich (Price 2013, 185 n.17).

[25]This story would need to be one such that the non-natural things postulated would be relevant to the explanation of how we come to converge on moral beliefs.

fully explore this option, it will be useful to consider a recent exchange between Price and Brandom on causal and dispositional modality.

3   Peirce, Price, and Brandom on Modality

3.1   Brandom's Modal Expressivism and Modal Realism

In recent work Robert Brandom has attempted to draw together features of modal realism and modal expressivism. Brandom's target vocabulary is variously described as physical and causal modality. Under this heading falls:

1. physical/causal necessity and possibility,

2. subjunctive conditionals, and

3. dispositional language.

An example of each may help:

1. 'It is not possible for a dog to also be a squirrel.'

2. 'If the culprit had been unknown to the dog, then it would have barked.'

3. 'Greyhounds are gentle animals.'

As well as the lawlike features of caninity, this form of modality also encompasses the laws of nature. On Brandom's view, to understand this vocabulary we need both a modal expressivism and a modal realism that is not earned by virtue of anything as low-cost as i-representation. If Brandom is right we will have an example of a practical stance (the modal expressivism) requiring us to also acknowledge a corresponding feature of reality.

   I'll start with Brandom's modal expressivism. Brandom takes modal language to express certain relations of consequence and incompatibility between empirical descriptions that we take ourselves to be committed to by virtue of deploying descriptive language. For example, correct application of the concept <u>dog</u>[26] implies (defeasibly) correct application of <u>four-legged</u>. We might express this consequence relation with the sentence 'dogs tend to develop four legs'. Alternatively, correct application of <u>dog</u> excludes correct application of <u>squirrel</u> to the same object at the

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[26]I will follow Brandom's convention of underlining mentioned concepts in this section.

same time. We might express this relation with the sentence 'it is not possible for a dog to be a squirrel'.

On Brandom's view, the expression of these relations between empirical descriptions allows modal statements to function as 'inference tickets'. For instance, the claim that it is not possible for a dog to be a squirrel, licenses the inference from 'Murphy is a dog' to 'Murphy is not a squirrel', and the claim that dogs tend to develop four legs (defeasibly) licenses the conclusion that 'Murphy has four legs'.

An important further function of modal vocabulary is to help us articulate the counterfactual or merely possible circumstances in which such material inferences fail. So, for instance, I could characterise the circumstances (including some very unfortunate accidents) which would ruin the inference from 'Murphy is a dog' to 'Murphy has four legs'. Without subjunctive conditionals, and especially counterfactuals, we could not do this.

Modal vocabulary articulates something about the structure of our language. It is thus, in a sense, metalinguistic. Brandom takes his modal expressivism to offer us a 'pragmatic metavocabulary' for modal language. A 'pragmatic metavocabulary' tells us what we *do* with a given vocabulary. To repeat, on Brandom's view, what we do is express the relations of consequence and incompatibility that hold between empirical descriptions; and especially the counterfactual robustness of the material inferences we endorse.

It is worth adding that Brandom takes the structural features of language articulated by modal vocabulary to be necessary features of any language that includes empirical descriptions. They are not optional extras. Brandom calls this claim the 'modal Kant-Sellars thesis,' which he states as follows: 'in knowing how to use ordinary empirical descriptive vocabulary, one already knows how to do everything one needs to know how to do in order to be able (in principle) to use alethic modal vocabulary' (Brandom 2015a, p. 179).

Defending this thesis, Brandom notes that we do not take someone who cannot draw out any further consequences from applying a concept in a given situation to have grasped the relevant concept. If I say that there are lots of squirrels in the woods by the Loxley, but do not realise that this implies that the Loxley would be a good place to take my visitor from New Zealand who has never seen a squirrel and wants to be shown one, then I fail to grasp the concept I am supposedly applying. In this case, my claim would not describe the woods as 'full of squirrels', the phrase would instead function as a 'mere label'. On Brandom's view, for something to count

as a description at all, it must be in the kind of relations to other descriptions that are made explicit by modal vocabulary.

We can now turn to the realist side of Brandom's position, which aims to provide a semantic metavocabulary to compliment the pragmatic metavocabulary given by his expressivism. A semantic metavocabulary aims to tell us what we are talking about, or what we are responsible to, when using the vocabulary in question. Brandom characterises 'modal realism' as any view which maintains the following three theses:

1. 'Some modally qualified claims are *true*'

2. 'Those that are state *facts*'

3. 'Some of those facts are *objective,* in the sense that they are independent of the activities of concept users: they would be facts even if there never were or never had been concept users' (Brandom 2015a, p. 195).

Brandom takes (1) and (3) to be true for naturalistic reasons: (1) is instanced by statements of laws of nature, while (3) is a result of the fact that some of these laws are time-symmetric. If we denied (3) we'd have to say that the laws of nature came about at the same time concept-users appeared.[27] Brandom takes (2) to be true by definition, for 'the facts just *are* the true thinkables and claimables' (Brandom 2015a, p. 195).

Brandom's particular way of implementing modal realism holds that '[w]ays the world can be empirically described as being stand to one another in objective, modally robust relations of material consequence and incompatibility' (Brandom 2015a, p. 198). His example of the former is '[i]f the sample were (had been) pure copper, then it would be (would have been) denser than water'. His example of the latter is that '[a] sample's being pure copper is incompatible with its being an electrical insulator' (Brandom 2015a, p. 198). It is really the case that certain ways the world can be *exclude* and *entail* other ways the world might be.

Realism about these modal facts is, Brandom thinks, implicit in realism about the objects of ordinary empirical descriptions. To make this out he starts from

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[27]Brandom mentions Huw Price here as an example of a philosopher 'both competent and willing' to go against the physicists own use of modal vocabulary. This does not greatly affect the dialectic here for two reasons. First, the Pricean arguments I am interested in do not turn on the natural scientific details. Second, while Price may be 'competent' to go against the physicists, Brandom is clearly not convinced by the actual arguments that Price offers on the basis of his scientific competence.

the claim that the world is describable, or *determinate*. Now, to be determinately one way is to *not* be some other way. Brandom endorses, with arguments that we cannot pause to consider, a 'Hegelian' conception of determinateness. According to this conception, the relevant kind of difference is 'exclusive' rather than 'mere' difference (Brandom 2015a, p. 200). The difference between two properties is exclusive if they cannot be possessed at the same time by the same object. The property of being a dog and the property of being a squirrel are exclusively different: nothing can be both at once. The property of being a dog and being lovely to be around are merely different, since while they can be distinguished, possessing one does not preclude possessing the other; in fact, many objects do. But if we take the world to be determinate in this exclusive sense, we are automatically committed to material incompatibilities (and also to material consequence relations). That is, applying this notion of determinateness to the world commits one to modal realism: '[a] world without modal facts would be an indeterminate world' (Brandom 2015a, p. 202).

3.2   Modality and External Constraint

In order to put Brandom's views in contact with Price's it will be helpful to add one further detail to Price's position. When drawing the distinction between e-representation and i-representation, Price presents it as based on an underlying distinction between two forms of external constraint. The first, 'in-game', notion concerns the norms provided by 'the game of giving and asking for reasons' (Price 2013, p. 37). By this, Price means the constraint provided by the norms of our various assertoric practices. A basic constraint of this sort that will come up again later is the normative incompatibility of being simultaneously committed to two contradictory beliefs. The players of a game of chess are bound in a similar way by the rules of the game, which they must submit to if they are to play at all. This notion corresponds to i-representation.

The second notion is characterised by, in Price's words, 'covariance—and hence "normal", "intended" or "proper function" covariance—between a tokening of a representation and an element of an external environment' (Price 2013, p. 37). I'll call this the 'out of game' notion. To be constrained by the environment, in this sense, is for the appropriateness of your representational system to be measured by the presence or absence of some 'element' of the external environment. A failure of this capacity is likely to be more immediately felt than a failure in the 'in-game' sense.

For instance, failing to track the presence of a wall is liable to lead you to walk in to it. The 'out-of-game' notion of externality is aligned with e-representation.

The first thing to note is that the form of modal expressivism we have considered introduces only 'in-game' constraint. It is an 'in-game' feature of the game of giving and asking for reasons that a commitment to 'Murphy is a dog' is incompatible with a commitment to 'Murphy is a squirrel'. If I take on those incompatible commitments, I will not be thought rational by my conversational peers. However, I am not physically prevented by some feature of my environment from taking them on. In fact, I am sure that I am in such a state now with respect to *some* of my commitments. That is, if I were to follow all of the inferential chains licensed by my present beliefs, I would end up deriving a contradiction. I do not, however, know which of my commitments are incompatible. If I did know, I would attempt to change the commitments in question.

Brandom takes the adopting of this 'in-game', expressivist, story to be necessary for even understanding what it is that we are realists about in the modal case. In Brandom's terms, modal realism is 'sense-dependent' on modal expressivism. The concepts in which modal realism is cashed out, fact and law, are only able to be understood if you also understand asserting and inferring. On Brandom's view, facts are essentially assertibles, laws are essentially inference supporters (Brandom 2015a, pp. 208-9).

So far we have not said anything that Price has to disagree with. The difference comes when we turn to the sense in which Brandom makes modality not merely 'in-game'. Brandom rejects the view that modal realism can be brought by appeal to what he calls 'declarativism', the view that truth-aptness can be brought simply by means of declarative form. On such a view, as we've seen when discussing Price's i-representation, a statement of Newton's second law ($F = ma$) would be just as fact-stating as 'one ought not to be cruel'.[28] Brandom wants something stronger (Brandom 2015a, p. 207).

The realism Brandom wants must satisfy, in his words, the 'dual requirements of *semantic government* of claimings by facts and *epistemic tracking* of facts by claimings' (Brandom 2015a, p. 210). Semantic government captures the thought that what we are talking about ought to have some authority over what we say about it. In Brandom's words '[w]hat one is talking about provides a standard for the assessment of what one says'.

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[28]These are Brandom's examples (Brandom 2015a, pp. 207-8).

For instance, if I say that the Loxley River joins with the Rivelin at Malin Bridge, the standard for assessing the appropriateness of that claim will depend on how things are with the Loxley, the Rivelin, and the Malin Bridge. Semantic government can be achieved in the modal case by virtue of the fact that the relations of material consequence and incompatibility between empirical descriptions and the relations of material consequence and incompatibility between the contents of facts (and possible facts) can, and ought to, 'line up' with one another (Brandom 2015a, p. 211).

Epistemic tracking, on the other hand, is a matter of subjunctive relations between possible facts and claimings. Epistemic tracking holds if it is true that *were the facts different* then the claimings would be different also (Brandom 2015a, p. 211). This form of tracking, unlike 'e-representation', need not be causal (Brandom 2015a, p. 212).

It seems that Brandom diverges from Price on modality at least in so far as Brandom adopts the following two theses:

1. The semantic government of modal claimings by modal facts is not merely an 'in-game' feature of modal discourse.

2. The epistemic tracking of modal facts by modal claimings is not 'e-representation' (or 'out-of-game' constraint).

Brandom must at least take (1) to be true by virtue of his rejection of declarativism. An important part of the story about semantic government is that we want to pattern the normative structure of our claimings on the modal structure that we take to relate the contents of possible facts. This is not a merely 'in-game' conception of what's going on. That is, it's not just that we are subject to certain norms by virtue of participating in modal discourse, and that we then 'project' those norms onto the world. Even on this view there would be a sense in which there is semantic government of claimings by facts: we take our claimings to be subject to the relevant norms, and take the facts to be the 'projection' of those norms. Even with only in-game constraint, failing to live up to the norms can easily be presented as failing to be governed by the appropriate facts. However, Brandom's rejection of declarativism explicitly rejects the idea that this notion of semantic government is sufficient in the modal case.

The truth of claim (2) depends on how narrow the notions of 'e-representation' and 'out-of-game' constraint are. Both notions point to 'covariation' of a partic-

ular representation with a particular feature of the environment. But, it seems that Price cannot include features of the environment that are themselves modal. According to Price, the function of modal language of this sort can be captured without appealing to 'e-representation'.[29] On this view, then, modal features of the environment cannot be tracked in the out-of-game, e-representational, sense. The resulting conception of modal language presents it as representing the modal facts by means of a structural isomorphism between the normative relations between claimings and the modal relations between contents of (possible) facts. The modal facts are not items *in* the environment in the narrow sense of Price's out-of-game constraint. Rather, the modal facts are part of the structure of any determinate environment.

3.3   Brandom and Price in Light of Peirce

Brandom's criticism of Price on the issue of modality can be sharpened by applying three features of the Peircean absolutist approach to metaphysics: the prioritisation of logic to metaphysics, the cenoscopic characterisation of philosophy, and the realist conception of reality ascriptions. This will allow Brandom's account of modality to provide an example of the kind of case where a certain kind of 'practical stance', namely the practical stance of any possible inquirer, does not preclude the Peircean pragmatist from taking on metaphysical commitments. In fact, it encourages them.

The cenoscopic approach to philosophy can only function if we have some means of making judgements about what would be true of any possible inquirer. One aspect of Peirce's logic that fills this role is his account of truth as an ideal for inquiry. It is a normative claim that any possible inquirer *ought to* adopt something like the absolute truth as an ideal. Various other features of Peirce's logic are an attempt to provide an account of the structures of thought that might enable us to discover the truth. This includes, for instance, his arguments for the three categories as necessary and irreducible features of thought. There are various methods for showing that some concept or practical orientation is necessary for the possibility of thought.

We quickly passed over the cenoscopic aspect of Brandom's position in the summary above. I noted that Brandom endorses the Kant-Sellars thesis about modal-

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[29]Recall that this is an important premise in his argument that the language of natural science is not entirely e-representational.

ity according to which any language user in a position to use ordinary empirical descriptive vocabulary is also in a position to use modal vocabulary. Brandom expands on this thought as follows:

> As I would like to formulate it, the Kant-Sellars thesis begins with the claim that in using ordinary empirical vocabulary, one already knows how to do everything one needs to know how to do in order to introduce and deploy modal vocabulary. If that is right, then one cannot be in the position of the atomist (for instance, empiricist) critic of modality professes to find himself in: having fully understood and mastered the use of *non*modal vocabulary, but having thereby afforded himself no grip on the use of *modal* vocabulary, and no access to what it expresses. The Humean-Quinean predicament is accordingly diagnosed as resulting from a failure properly to understand the relation between modal vocabulary and what one must *do* in order to *deploy* nonmodal, empirical, descriptive vocabulary. (Brandom 2015b, p. 152)

Ordinary empirical vocabulary includes, for instance, observational reports like 'there is a black dog over there' and ordinary descriptions like 'there are squirrels in the woods along the Loxley'. The claim that anyone who can deploy these concepts must also be in a position to be able to 'introduce and deploy' modal vocabulary is based on the claim that the use of these concepts requires an ability to discriminate between those counterfactual situations in which material inferences using the concepts would fail to obtain. Modal vocabulary is the vocabulary that makes this ability explicit.

Brandom's argument, if it is successful, holds for anything that deploys descriptive concepts. It seems that anything that is able to engage in inquiry must be able to make descriptive judgements about the domain that they are inquiring into. So, put into the cenoscopic key, Brandom is here arguing that any possible inquirer must have the abilities that are made explicit by the use of modal vocabulary. This is made clear by his claim that the position of the 'atomist [. . .] critic of modality' is impossible. We have, then, a piece of cenoscopic logic here which we can attempt to transfer to metaphysics.

The prioritisation of logic over metaphysics in the hierarchy of the sciences indicates that the practical stance of the inquirer is built in to Peirce's account of the role of metaphysics. This is particularly clear in the 1896 passage where Peirce begins with the regulative 'laws of logic' and then takes them to be 'truths of being'. This is to build the stance of the participant in the practice of inquiry into your metaphysics. There is no way to make sense of the idea of regulative rules absent some conception of the practice that those rules regulate. The proposals for Peircean metaphysics developed in the previous chapter hold that metaphysics is

either motivated by an explanatory question about the success of our own practices (the contextualist proposal) or by the attempt to provide an account of the general structure of any reality that could be the subject of inquiry (the absolutist proposal). In both cases the practical stance of the inquirer is an input into metaphysical reflection. In neither case is there license to endorse as real something that entirely outruns either present inquiry (the contextualist) or possible inquiry (the absolutist). The possibility of endorsing such a thing seems to be built in to Price's claim that metaphysics is impossible unless we have some way of breaking outside the limits of our practical stances.

The prioritisation of the normative sciences, including logic, is a core plank of Peirce's form of pragmatism. Pragmatism starts with practice. For Peirce, it starts with the practice of theoretical inquiry understood in cenoscopic terms. For Brandom, it starts with the perspective of the language user who can deploy empirical descriptions. For Price, it starts with the descriptions of practice available to the biologist or biological anthropologist. Brandom and Peirce's respective starting points allow for the Peircean shift from logic to metaphysics, whereas Price's does not. Price's approach, like the object naturalism he criticises, starts by privileging certain results of contemporary science. Price takes philosophy to 'defer to' the sciences, and this leaves their results outside the domain of philosophical criticism. As Peirce warns, this move often hides an assumed and uncriticised (in Price's case uncriticisable) metaphysics. To see this, we return to the issue of reality ascriptions.

Peirce takes it that everyone should at least agree on the definition of the reality of an object or phenomenon in terms of its independence from the thought or you or I or any particular collection of people. Price claims that the dependence of our concepts on practical stances prevents us from being able to either affirm or deny the independence of thought of anything falling under those concepts. This is to adopt something like the nominalist conception of reality ascriptions rather than the realist one. Recall that the reason we cannot engage in metaphysical inquiry with the notion of e-representation is that no language is entirely e-representational. So, on Price's view, if we *were* to engage in metaphysics, we would need something like an entirely e-representational language. Now e-representations represent by virtue of tracking some feature of our natural environment. This implies that Price thinks that if we were to ascribe or deny metaphysical reality to something, then it would have to be a trackable entity in the environment. This is, to return to

Peirce's metaphor, to place reality at the observation end of inquiry. Moreover, it is to stack the decks in favour of a metaphysics of particular individuals of the sort that might be tracked. This is a plausible candidate for a metaphysical view adopted by someone who claims to do without metaphysics.[30]

The brand of modal realism that Brandom endorses does not take modal features of the world to be straightforwardly tracked. We do not simply look into the world and report the presence of laws in the way we report the presence of cups and saucers or squirrels and dogs. A law is not a feature of the environment that is tracked in the same sense that its instances are. I can track the acceleration of a cup dropped to the floor, but I do not track $F = ma$ as though it were some entity in the environment. This difference is captured by Brandom's modal expressivism. The particular expressive role that Brandom assigns to modal discourse does not apply to ordinary descriptive vocabulary. Ordinary descriptive vocabulary does not make explicit the counterfactual robustness of material inferences, for instance. Brandom is thus a realist about something that does not sit at the 'observation end' of inquiry. This suggests an opening for the realist conception of reality ascriptions. If the realist conception is adopted, then the necessity of modal concepts for any inquirer will lead to the conclusion that we should adopt some form of modal realism.

One reason for thinking that Brandom has something like the realist conception in mind comes in his responses to an earlier version of Price's challenge to his treatment of modality. Price introduces the thought that a linguistic-anthropological account of modality could explain 'why creatures in our situation would be led to develop a modal physics, even if they inhabited a nonmodal world' (Price 2008, p. 89). To this, Brandom responds:

> I don't understand what 'a nonmodal world' could conceivably mean. That counterfact-
> ual—what if we inhabited a nonmodal world—makes no sense if the expressive re-

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[30]Recall that Peirce's other way of capturing the difference between the nominalist and realist conceptions of reality ascriptions distinguishes between the observation end and the results end of inquiry. It is plausible to think that e-representation is an 'observation end' notion. The detection of something in the environment is the trigger for a process of inquiry, rather than its result. This provides further evidence that Price adopts the nominalist conception of reality ascriptions. In addition, it suggests why a recent proposal for aligning Peirce and Price developed by Henrik Rydenfelt. Rydenfelt takes Peircean inquiry to 'turn' merely i-representational discourses into e-representational ones (Rydenfelt 2013, p. 19). On the view defended here this proposal fails to properly distinguish the observation and result ends of inquiry, and to overestimate the breadth of the things that can be 'tracked' in the environment. In particular, it would not allow us follow Brandom's form of modal realism.

> sources recruited by modal vocabulary are really part of the very meanings of the words that we use to describe the world. (Brandom 2008b, p. 145)

He then goes on to say, in line with the Kant-Sellars thesis, that 'the very idea of empirical descriptive and explanatory talk involves [...] modal articulation'. Brandom is puzzled by 'the enterprise of trying to assign responsibility for some of these features [of language] to one side or the other of a word-world divide'. And finally, he says that 'if our talk about the world is necessarily modally articulated, I don't really understand the point of saying that there is no objective feature of the world that corresponds to these things' (Brandom 2008b, p. 145). One way to abandon the wholesale distinction between the world side and the word side is to adopt Peirce's realist conception of reality ascriptions. In so far as Brandom claims to be puzzled by how to deal with these issues, the Peircean position may provide a useful conversation partner.[31]

It would be misleading not to note Brandom's stated commitment, in the same paper, to 'turn [his] back on metaphysics' (Brandom 2008b, p. 146). However, Brandom does not go into detail about what he means by metaphysics in this response to Price. In an appendix to *Between Saying and Doing*, Brandom suggests that the aim of metaphysics is to provide a semantic metavocabulary into which statements made in any other vocabulary can be paraphrased without loss (Brandom 2008a, pp. 218–221). That is, metaphysics would provide a master language in which anything which can (either meaningfully or truly) be said in language at all can be said. This is not what Peirce is attempting to offer in his metaphysics. Metaphysics, as we have seen, offers a general conception of things on the basis of which hypotheses can be generated in the other sciences. It does not attempt to provide some language into which all other languages can be reduced.

Brandom's argument for a combination of modal expressivism and modal realism follows something like the Peircean pattern. He holds that a certain practical stance is *necessary* for anything that employs empirical descriptive vocabulary, and that features of that practical stance are made explicit by modal vocabulary. The features of this stance are articulated from the perspective of the language user rather than from the third person perspective of the biologist or anthropologist. From this perspective we (fallibly) draw conclusions about what must be for anything like us. That is, Brandom follows something like the cenoscopic method.

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[31]Brandom also suggests that Price's worries about the word side and the world side of the ledger reveal that he is still engaged in a kind of metaphysics (Brandom 2008b, p. 146). This is essentially the same charge that Price adopts the nominalistic conception of reality ascriptions.

Finally, something like Peirce's realist conception of reality ascriptions offers some leverage on the problem of diagnosing the metaphysics that Brandom takes to be implicit in Price's attitude to modality.

The abductive features of Brandom's proposal are somewhat obscured. This is a possible divergence between Brandom and the absolutist Peircean metaphysician. Recall that the abductive nature of metaphysics was twofold. First, Peircean metaphysics is concerned with what the inquirer brings to inquiry. Second, metaphysics is more dependent than most sciences on abductive reasoning. Brandom's account of modality certainly has the first feature. His expressivist story is concerned with the kind of conceptual structure that any possible inquirer must be able to bring to the world in order to even make descriptive claims about it. The second sense in which Peircean metaphysics is abductive is less clear in Brandom's case. In order to judge the question it would be necessary to consider the form of Brandom's arguments for the Kant-Sellars thesis in more detail than is possible here. However, we can say that, as the Peircean takes up Brandom's position, the hypothesis of reality plays an important role. The Peircean deploys the hypothesis that there is a reality that answers to the realist conception of reality ascriptions in order for their reading of the necessary structures of inquiry onto reality to get off the ground at all. Moreover, this story is motivated by the rational hope that the ideals that Peirce articulates in his normative sciences are attainable.

The alignment of Peirce with Brandom just defended is by no means perfect. For one thing, Brandom takes there to be a normative Kant-Sellars thesis. However, he does not think that this thesis should motivate a parallel form of normative realism (e.g. Brandom 2015b, pp. 166–172). However, the Peircean strategy just presented will struggle to make the distinctions that Brandom wants to draw between the normative and modal cases. However, the aim of this discussion was not to show that Brandom is a Peircean without knowing it. Rather, it attempted to show how arguments recently developed by Brandom can be taken up by the contemporary Peircean and to show that the position we have developed throughout this thesis is sufficiently close to contemporary debates to be worthy of consideration by contemporary pragmatists. In addition, the Peircean take up of Brandom's combination of modal realism and modal expressivism provides an example of a way in which the Peircean conception of metaphysics might be carried out today.

Conclusion

This chapter has critically compared some recent developments in pragmatism with the two proposals for Peircean metaphysics developed in the previous chapter. We began with an account of the basic form of Huw Price's pragmatist rejection of metaphysics. Price argues, on the basis of a kind of anti-representationalism, that there is no means for a pragmatist to either affirm or deny metaphysical claims. On this view, pragmatists should be metaphysical quietists. I argued that the contextualist approach, since it does not require a uniform metaphysical treatment of true propositions, does not fall afoul of Price's original argument against metaphysics. However, more recent developments in Price's approach introduce a distinction between two forms of representation and contain an argument that, while we can have a notion of externality in our explanations of the function of certain language, we have no language which will enable us to either affirm or deny reality. This is because Price takes the adoption of some practical stance or other to be a necessary feature of human language use. I argued that this shows that Price adopts the nominalist conception of reality ascriptions and that this metaphysical thesis is assumed by Price.

We then turned to recent exchanges between Price and Brandom on the topic of causal/dispositional modality. I argued that, Brandom's combination of modal expressivism and modal realism reflects something interestingly close to the absolutist proposal for Peircean metaphysics. In particular, the realist side of Brandom's account of modality seems to adopt something like the realist conception of reality ascriptions, and to argue for it on the basis of a cenoscopic claim about any possible inquirer. That is, we can adopt a kind of realism about dispositional modality on the basis that it comes along with the conception of the world as determinate. Any world that could be inquired into must be, on Brandom's view, modally structured.

Conclusion

This thesis has derived a pragmatist account of the role of metaphysics from the late 19th and early 20th century work of Charles Peirce. According to Peirce we are to understand metaphysics as the final part of cenoscopy, the observational science of that which is available to any inquirer simply by virtue of being an inquirer. Having developed an account of the ideals that should be adopted by any inquirer, and especially of truth, the Peircean metaphysician asks what any world that could be successfully inquirer into would have to look like. In this, it conceives of itself as offering hypotheses whose success will be determined by the extent to which they enable successful inquiry in other domains. On the Peircean view, defended in this thesis, all such inquiry either explicitly or implicitly depends on metaphysical and logical hypotheses concerning the quality of explanations and of the kind of reality that could support them. This position was critically compared with recent work in the pragmatist tradition. I argued that Price's arguments to the conclusion that pragmatists ought to be metaphysical quietists can be rejected by the Peircean. In addition, recent pressure placed on Price's position by Brandom's modal realism suggested that there is space for a more full-throated Peircean strategy to be deployed by contemporary pragmatists.

In order to defend these views, we began Chapter One with an account of Peirce's hierarchical classification of the sciences. According to Peirce's classification, philosophy is foundational for the other sciences, and metaphysics is, in turn, grounded in the other subdisciplines of philosophy. We considered what Peirce means by a theoretical science and what distinguishes philosophy from other forms of theoretical inquiry. While both share the same 'spirit', defined in terms of a sincere desire for the truth, they are based on different kinds of observation.

In Chapter Two, we considered the distinction between cenoscopy and idioscopy in more detail and offered some Peircean arguments for the claim that idioscopy depends on cenoscopy for principles. I argued that cenoscopy should be thought of

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in terms of what is available to any possible inquirer, rather than in terms of what is simply available 'from the armchair'. The dependence of idioscopy on cenoscopy was made out in terms of the necessity for abductive inferences in all forms of inquiry and in terms of the possibility that alternative arrangements would undermine the ideal of rational self-control articulated by Peirce's normative sciences. This position was distinguished from recent pragmatist forms of philosophical naturalism. We saw that pragmatism need not imply either the total abandonment of 'first philosophy' or deference to the results of the natural sciences.

Chapter Three developed Peirce's core logical doctrines concerning truth. I argued that, in addition to the contextualist understandings of truth developed by Misak and Hookway, there is further room for a notion of absolute truth in Peirce. I argued, in addition, that this notion is an important feature of Peirce's cenoscopic logic. That is, the absolute truth functions as an 'ideal limit' which could be agreed upon by any possible inquirer, whereas particular local norms of inquiry of the sort considered by the contextualist might be unavailable to some possible inquirers. The notion of the absolute truth was articulated by means of Peirce's semeiotic account of the proposition. Unlike the abstract propositions considered by the contextualist, propositions which by nature have to attend to some particular properties of some particular subject to the exclusion of others, the absolute truth is not abstract. As a result, there is only one proposition which is 'absolutely true'. Moreover, this proposition is identical with reality in so far as it is intelligible. I compared this view this the identity theory more famously defended by F. H. Bradley.

In Chapter Four, the Peirce's conception of metaphysics was developed. This was done by considering Peirce's various accounts of the shift from logic to metaphysics. We also saw in more detail the role of metaphysics in helping to solve idioscopic problems. A central aspect of this account was Peirce's defence of the realist conception of reality ascriptions. The absolutist Peircean metaphysical strategy outlined in this thesis relies on this conception of reality ascriptions in order to make the move from logic to metaphysics. We also saw the extent to which a merely contextualist approach to Peircean metaphysics, of the sort developed by Hookway, can follow the same pattern.

Finally, Chapter Five put Peirce's conception of metaphysics into critical contact with recent anti-metaphysical work by Price. We saw that even the contextualist approach to Peircean metaphysics can challenge Price's pragmatist rejection of

metaphysics. Contextualist Peircean metaphysicians can motivate metaphysics by asking explanatory questions about our success in various forms of inquiry. This need not rely on a metaphysically loaded conception of representation. However, we also saw that a more radical challenge to the Pricean position is available from the absolutist approach developed in Chapter Four. We saw that Price's position relies on the adoption of a nominalist conception of reality ascriptions. This was presented as an example of a metaphysical commitment which undermines Price's claim to do without any such commitments. In addition, we saw that the cenoscopic approach to metaphysics has some resonances with recent developments in Brandom's account of dispositional modality.

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