

Chris Barnham

**The Natural History of the Sign**

# **Semiotics, Communication and Cognition**



Edited by  
Paul Cobley and Kalevi Kull

## **Volume 29**

Chris Barnham

# **The Natural History of the Sign**

---

Peirce, Vygotsky and the Hegelian Model of Concept  
Formation

**DE GRUYTER**  
MOUTON

ISBN 978-3-11-069571-7  
e-ISBN (PDF) 978-3-11-069585-4  
e-ISBN (EPUB) 978-3-11-069592-2  
ISSN 1867-0873

**Library of Congress Control Number: 2022938210**

**Bibliographic information published by the Deutsche Nationalbibliothek**

The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available on the internet at <http://dnb.dnb.de>.

© 2022 Walter de Gruyter GmbH, Berlin/Boston  
Cover design based on a design by Martin Zech, Bremen  
Typesetting: Integra Software Services Pvt. Ltd.  
Printing and binding: CPI books GmbH, Leck

[www.degruyter.com](http://www.degruyter.com)

---

*For Isaac and Edwin and in memory of my mother and father*



# Acknowledgments

Although this book was written in the course of 2020, the impulse to write it stems from many sources and from many parts of my career.

Firstly, I must thank my philosophy tutor at Magdalen College Oxford, Dr Ralph Walker, who inspired my lifelong interest in philosophy, and Professor David Wiggins who, at Birkbeck College in the 1980s, introduced me to the work of Leibniz.

I also owe a debt of gratitude to my professional colleagues who encouraged my interest in signs, and their applications, throughout my career. In particular, I should mention Gill Ereaut, Malcolm Evans, and the late Ginny Valentine, in this respect.

I would also like to acknowledge the support of my two PhD supervisors at UCL – Professor Andrew Burn and Professor John Vorhaus. Whilst many would have cautioned against an attempt to bring the two worlds of German Idealism and semiotics together, their faith in me was fundamental in facilitating my research.

Finally, I would like to thank my editors, Professor Paul Cobley and Professor Kalevi Kull, who suggested that this book should be written and who have provided me with their unstinting support throughout the process leading to its publication. Without their help, it would never have been realised.





# Contents

**Acknowledgments — VII**

**Introduction: Hegel, Peirce, and Vygotsky — 1**

## **Part One: Perception and the model of ‘secondary dualism’**

- 1 The model of ‘secondary dualism’ — 21**
  - 1.1 The ‘mirror of nature’ — 23
  - 1.2 Problems with ‘secondary dualism’ — 30
- 2 Semiotics and ‘secondary dualism’ — 33**
  - 2.1 The Saussurean tradition — 33
  - 2.2 Biosemiotics and the *Umwelt* — 38
- 3 Hegel, Peirce, and Vygotsky: Models of perception — 46**
  - 3.1 Hegel on perception — 46
  - 3.2 Peirce on perception — 48
  - 3.3 Vygotsky on perception — 55

## **Part Two: Concept formation as mediation**

- 4 Hegel’s template of concept formation — 63**
  - 4.1 Background: Spinoza and Leibniz — 63
  - 4.2 The Hegelian template — 70
- 5 Peirce: The three categories — 76**
  - 5.1 Firstness — 76
  - 5.2 Secondness — 79
  - 5.3 Thirdness — 84
- 6 Mediation in Peirce: The structure of the sign — 90**
  - 6.1 The representamen — 90
  - 6.2 The ‘object’ — 92
  - 6.3 Medieval, Kantian, and Hegelian accounts of the ‘object’ — 96
  - 6.4 The determination of the object — 100

- 6.5 Immediate and dynamic objects — 102
- 6.6 The interpretant — 106

**7 Mediation in Vygotsky: ‘Word meaning’ — 114**

- 7.1 Dialectical psychology — 114
- 7.2 Mediation in Vygotsky — 117

**Part Three: Concept formation in Peirce and Vygotsky**

**8 Peirce: The classification of signs and the first trichotomy — 131**

- 8.1 Peirce’s classification of signs — 132
- 8.2 Qualisigns, sinsigns and legisigns — 138

**9 The received view of the Peircean icon — 141**

- 9.1 Distinguishing icons from hypoicons — 142
- 9.2 Attacks on the Peircean icon — 143
- 9.3 Stjernfelt’s diagrammatology — 146

**10 Peirce: Concept formation in the second trichotomy — 150**

- 10.1 Revising the Peircean icon — 150
- 10.2 Peirce on indices — 156
- 10.3 Peirce on symbols — 159

**11 Peirce: The third trichotomy — 168**

- 11.1 The third trichotomy and ‘natural propositions’ — 168
- 11.2 Redefining biosemiotic meaning making — 174

**12 Vygotsky on concept formation — 179**

- 12.1 The ‘natural history of the sign’ — 179
- 12.2 The zone of proximal development — 188

**Part Four: Peirce: The implications of semiotic concept formation**

**13 Pragmatism, truth and abduction — 197**

- 13.1 Concept formation and pragmatism — 197
- 13.2 Peirce’s concept of truth — 203
- 13.3 Abduction — 209

<b>14</b>	<b>Peircean semiotics and learning theory —</b>	<b>215</b>
14.1	The learning process: ‘semiotic scaffolding’? —	217
14.2	Peirce’s logic and semiotic freedom —	222

<b>References —</b>	<b>227</b>
---------------------	------------

<b>Index —</b>	<b>239</b>
----------------	------------



# Introduction: Hegel, Peirce, and Vygotsky

From the distant standpoint of the twenty-first century, it is difficult to grasp the full impact of Hegel's philosophy on nineteenth century thought. Between Hegel and ourselves stand successive philosophical developments which have created distance from him. The 'analytic' tradition, the 'linguistic turn', the emergence of structuralism, and the rise of social constructivist models of meaning making, have engendered layers of misunderstanding which have tended to marginalise Hegel and given rise to many of the 'myths' (Stewart 1996) which surround his philosophical legacy. But Hegel's epistemological work clearly deserves consideration for its far-reaching influence on nineteenth century thought. Building on Kant, Hegel proposed a model of concept formation which addressed the flaws of Kant's earlier work. He proposed, in turn, a model of his own offering an alternative account of how the human mind ascends from its basic perceptions to a system of interrelated concepts. The latter, he contended, forms a platform for synthetic knowledge of the world.

The central argument of this essay is that Charles Sanders Peirce, writing in the latter parts of the nineteenth century, was heavily influenced by this Hegelian model of concept formation. But Peirce believed that he identified several errors in Hegel's approach, and, like his German predecessor before him, proposed an improved system of his own. He rejected certain elements of Hegel's dialecticism, and, in its place, proposed that signs, acting in combination with each other, form the building blocks of empirical knowledge. This essay will argue that this philosophical position – a cardinal aspect of Peircean semiotics – has been given insufficient recognition in the secondary literature. By exploring these underlying similarities with Hegel, it is possible to shed considerable light on Peirce's semiotic thought.

A second and related theme of this essay is the impact of Hegel's philosophy upon the Russian psychologist, Lev Vygotsky. Writing half a century later than Peirce, Vygotsky also owed much to Hegel's account of concept development. As a psychologist, rather than a philosopher, he was, in some respects, further away from Hegel than was Peirce. Moreover, Vygotsky's focus was also narrower; he did not question some of Hegel's deeper epistemological concerns. But Vygotsky's model of concept formation still displays many Hegelian characteristics, and these bring him close to the revised account of Peircean semiotics that will be proposed here. The convergences that exist between Peirce and Vygotsky will, therefore, form a recurrent theme in this discussion. An understanding of their shared Hegelian heritage greatly enhances our comprehension of them both and the connections that exist between them.

This essay is aimed, therefore, at both semioticians who have an interest in Peirce, and educationalists who have an interest in learning theory. It is also hoped, however, that this analysis will also appeal to a third group – that of professional philosophers. Hegel's reputation as a philosopher has been slowly recovering from its relative neglect in the mid-twentieth century, but the following comparison of Hegel with Peirce and Vygotsky may help to demonstrate how he influenced modern semiotics. Indeed, it can be argued that the relative demise of Hegel's reputation in the twentieth century is one of the reasons why misunderstandings of Peirce and Vygotsky still exist in the secondary literature. Without the guiding template of Hegelian thought, both thinkers tend to be viewed through philosophical prisms that only emerged in the twentieth century and these have created significant barriers to our understanding of them.

Paradoxically, these historical prisms have also resulted in divisions being drawn between semiotics and philosophy. Peirce would have been more than dismayed by the way in which modern semiotics has become divorced from philosophy because he envisaged semiotics as offering solutions to the philosophical problems of his age. In contrast, twentieth century semiotics has shifted away from mainstream philosophy and towards a greater cultural orientation. This has been to the detriment of both Peirce's own legacy and modern philosophy.

But to begin our discussion, it is important to outline the ways in which Hegelian thought has been generally interpreted in the nineteenth and twentieth centuries. As such, it will be possible to grasp the philosophical distance that exists between the context in which Peirce and Vygotsky were writing and modern interpretations of their work. Contemporary semioticians are often distanced from this philosophical heritage by the tectonic shifts in philosophy which took place at the beginning of the twentieth century, and which were, in themselves, the result of the widespread rejection of Hegelian philosophy.

## The historical trajectory of Hegelian thought

In his *'Critique of Pure Reason'*, Kant argued that the empiricist model of knowledge, established in the works of John Locke and David Hume, was deeply flawed. In response, Kant claimed that the human mind, in understanding the world, contributes something to the activity of experience itself. Our perceptions provide our raw 'intuitions', but the mind brings to bear its own mental categories to make sense of the world. As Kant stated (Kant [1781] 1998: 193–194), "without sensibility no object would be given to us, and without understanding none

would be thought. Thoughts without content are empty, intuitions without concepts are blind”.

It was upon this platform that Kant claimed that synthetic knowledge of the empirical world is possible. But Kant’s contemporaries quickly highlighted that his position had several important flaws. Firstly, it placed a very significant weight on the mind’s ability to know the nature of its own intuitions. Both Hegel and Peirce rejected the assumption that such intuitive knowledge is possible. Secondly, Kant’s system still retained an implicit dualism – formalised in Kant’s distinction between the ‘phenomenal’ and the ‘noumenal’ worlds. The former comprises direct perceptions, whilst the latter exists ‘beyond’ the mind’s intuitions in a way which is unknowable. This division was viewed as a major weakness in Kant’s overall system. If it were allowed to stand, then Kant’s claim to synthetic knowledge would be founded on little more than a combination of the mind’s perceptions and its internal mental categories. In this context, Kant’s claim to synthetic knowledge would remain forever anchored in the phenomenal world.

In the early decades of the nineteenth century, Hegel sought to address these problems with a philosophical system based on a dialectical approach to knowledge. This cognitive template, discussed in detail in chapter four, was employed by Hegel to overcome both the intuitionism and dualism implicit in Kant’s thought. Hegel’s *Phenomenology of Spirit* was published in 1807 and his *The Science of Logic* from 1812–16. This approach was received so well by contemporaries that Peirce claims, as late as 1891, that the problems of Cartesian Dualism have effectively been solved. Peirce notes, for example, that “the old dualistic notion of mind and matter, so prominent in Cartesianism, as two radically different kinds of substance, will hardly find defenders today. Rejecting this, we are driven to some kind of hylopathy, otherwise called monism” (EP1: 292).

The impact of Hegelian thought on nineteenth century philosophy was, of course, extensive and has been well documented. The impact of Hegel on Marx and Engels, for example, need not detain us here. But Hegel’s influence was not restricted to Europe alone; it also spread to America. In part, this was because some American Hegelians, such as Brokmeyer, were immigrants from Germany (Goetzmann 1973). In part, it was also due to American philosophers, such as Royce, travelling to study in Germany. In the 1860’s, the ‘St Louis Philosophical Society’ was founded with the specific aim of spreading the influence of Hegelian thought. To this purpose, it launched the *Journal of Speculative Philosophy* which became “the most important philosophical journal in America from 1867 to 1893” (Goetzmann 1973: 8). This was a journal to which Peirce made contributions in the early part of his career (e.g., EP1: 11; EP1: 28; EP1:

56). In later years, the influence of Hegelianism also spread across several American universities. As John Kaag (2011: 557) notes, “Hegel’s followers invaded Harvard and MIT in the 1870’s and 1880’s, a fact that disturbed James by their total dominance of the philosophical field”, and this picture is supported by both Bernstein (2013: 105) and Jensen (2004: 271). In the early twentieth century, a Hegelian account of human cognition was revived by Royce, a colleague of Peirce, who delivered a series of influential *‘Lectures on Modern Idealism’* in 1906 (Royce [1919] 2017).

When reading Peirce, it is important to bear this nineteenth century context in mind. As will be seen, Peirce often depicts his philosophy as being distinct from Hegel, but it must be recognised that he was working in an environment that was already “thick with Hegelisms” (Jensen 2004: 271). As a result, Peirce sought to emphasise his points of difference from Hegel whilst assuming that his academic audience would probably recognise the underlying convergences in their thought. This is the philosophical context in which Peirce’s comments on Hegel should be interpreted.

In the early decades of the twentieth century Hegel’s reputation was seriously undermined, however, by two events that took place outside of philosophy itself – the outbreak of the First World War and the rise of Soviet communism in 1918. The perceived relationship between Hegelian thought and the ideology of the German state, on the one hand, and the new Soviet regime, on the other, rendered Hegel’s philosophy inimical to academics in both the USA and Britain. At the close of the war, Royce’s earlier *‘Lectures on Modern Idealism’* (Royce [1919] 2017) were published by Yale University. Even in these early post war years, their editor, Loewenberg, provides us with a vivid description of the emerging relationship with Hegelian thought (Royce 1919: ix):

We have particular reason to value at this moment a dispassionate estimate of that phase of philosophy which, like German music, must suffer through the retrospective judgment of the war. During the present generation it seems difficult to approach without prejudice the products of German genius. The war may be said to have created a ‘German problem’ [. . .] Unfortunately, the boundary between her war and her philosophy is not easy to define. The treacherous onslaught upon the peace of the world in 1914 was no isolated phenomenon. It was the outcome of a definite theory of life.

Matters were made worse by several other factors. In America, Peirce had died in 1914 and Royce in 1916. Their absent voices, which might have provided a bulwark for Hegelian philosophy, were replaced by philosophers keen to forge new beginnings. In the decades after 1918 several intellectual traditions emerged which represented substantial philosophical departures. In 1916, Saussure’s *‘Course in General Linguistics’* was published, initiating the beginnings of structural linguistics. In England, Russell developed his ‘logical atomism’ and his



theory of ‘knowledge by acquaintance’ (Russell [1959] 1985) whilst Ayer, following the Vienna Circle, advocated ‘logical positivism’ (Ayer [1936] 2001). But the most influential work was that of Wittgenstein, culminating in his *Philosophical Investigations* (Wittgenstein 2009). This legacy helped initiate both the ‘linguistic turn’ in modern philosophy and the ‘analytic tradition’. These perspectives formed new approaches to meaning making which were highly antithetical to the nineteenth century traditions of Hegel and Peirce.

But history had not yet finished with Hegel’s legacy. The growing threat of Soviet communism in the 1930’s, and the rise of fascism in the inter-war years, created further reasons to reject his thought. After the Second World War, and with the advent of the Cold War, the reputation of Hegel was arguably at its lowest point. One has only to read Popper to grasp the depths to which Hegelian philosophy had plumbed. Popper asserted, for example, in *The Open Society and its Enemies*, that “I have tried to show the identity of Hegelian historicism with the philosophy of modern totalitarianism” (Popper 1945: 78).

In the second half of the twentieth century Hegelian thought was largely in hibernation – at least in the Anglo-Saxon world. Bernstein (2013: 111) notes, for example, that “it was completely moribund – and this is just the way that most philosophers in America thought it should be”. One additional factor was, of course, McCarthyism which encouraged an intellectual environment which effectively “eliminated views like Hegel’s” (McCumber 1996: 46). Despite this, however, in the post-war period, Sellars was able to publish his influential *Empiricism and the Philosophy of Mind*. In this work, he attacked the ‘Myth of the Given’ and Sellars openly acknowledged that his views reflected “incipient *Meditations Hegeliennes*” (Sellars 1997: 45). However, it was not until the late twentieth century that interest in Hegel began to revive in any significant form with the work of John McDowell (1994) and Robert Brandom (2000). As such, it is only in recent decades that Hegel’s philosophical reputation has begun to be revised.

The trajectory of Hegelian thought across the last two hundred years, briefly summarised above, is relevant to this essay because it helps contextualise the ways in which modern semioticians have read Peirce. Separated from the Hegelian context which once enveloped his thought, Peirce’s semiotics can be perceived from a strictly twentieth century perspective. His philosophical references, and the terminology which he uses, thus become distanced from the modern reader. And this effect has also had an impact on our understanding of Vygotsky who has been often viewed through the same distorting lens. Modern perspectives on Vygotsky have, for example, emphasised his potential links to social constructivism and have diminished the highly significant influences of Hegel.

## Hegel and Peirce

One of the most comprehensive discussions of the relationship between Hegel and Peirce is that conducted by Robert Stern. His *Hegelian Metaphysics* (Stern 2009: 209–326) discusses, over one hundred pages, how Peircean thought was influenced by Hegel. He considers the connections between the two philosophers at four levels; Peirce’s pragmatism, a discussion of whether Hegel is a nominalist or a realist, and Peirce’s concepts of secondness and firstness. Although there are some points of divergence between Hegel and Peirce, Stern concludes that “in the final analysis, then, Peirce and Hegel can be brought closer together than may at first have appeared; and on reflection this is not so surprising” (Stern 2009: 326). The differences which exist between Hegel and Peirce will be evaluated later, but it is significant that Stern’s conclusion reflects the central thrust of this essay.

What is remarkable, however, is the way in which Stern’s discussion is still relatively restricted in its scope. In what is a wide-ranging analysis, there is scarcely any mention of Peirce’s sign system. There is no discussion of icons, or symbols, and only a passing reference to his notion of indexicality (Stern 2009: 295–297). This provides an example of how many philosophers view Peirce’s philosophy. Whilst being willing to engage with his theories of cognition, they seem reluctant to view Peirce’s semiotics as playing a part in his epistemology. In Karl-Otto Apel’s work on Peirce (Apel: 1981) a similar pattern can be found. His book focuses on Kant’s influence on Peirce and so Hegel is inevitably drawn into his discussion. But like Stern, his analysis is primarily concerned with Peirce’s categories, and his pragmatism, and he only touches on Peirce’s sign system (Apel 1981: 99–109).

Stern also notes the relative scarcity of academic interest in the relationship between Hegel and Peirce and he highlights that the “connection between the two has received hardly any critical attention” (Stern 2009: 269). He finds only four journal articles and an unpublished PhD dissertation that deal with their potential relationship. Given that Hegel and Peirce are some of the most important thinkers in the nineteenth century, this represents an interesting vacuum in the literature. In 1986, Max Fisch wrote a short article suggesting that much more work could be carried out in this area and he asserts that, of the influences on Peirce, “pre-eminent among these was Hegel’s” (Fisch 1986b: 264). Significantly, however, Fisch also notes that Peirce was concerned to distance himself from Hegel and that, “we may put a more charitable construction on his many overemphatic criticisms of Hegel, which might otherwise strike us as hostile or arrogant” (Fisch 1986b: 274–275).

In one of the articles mentioned by Stern, Shapiro also agrees that there are significant convergences between Hegel and Peirce, and he claims that “in fact, Hegel’s conception of method is much like the one which Peirce uses to best advantage” (Shapiro 1981: 274). Moreover, he argues that “among the aspects of Hegel’s system which Peirce explicitly found congenial are evolutionism, the denial of an unknowable thing-in-itself, a recognition of the principle of continuity, objective idealism and the triadic structure” (Shapiro 1981: 269).

Another commentator that Stern highlights is Jensen. The latter also agrees that there are important similarities between Hegel and Peirce, but he mistakenly concludes that this convergence was determined by Peirce’s desire to appeal to a Hegelian audience. He states that “Peirce’s references to Hegel are primarily, I conclude, intended to make his own thought more accessible to his would-be auditors; in short, Peirce was trying to establish a connection ‘with things already in the air’” (Jensen 2004: 283). Elsewhere, Townsend also concludes that “there is a fundamental and significant resemblance between the logic of Peirce and that of Hegel” (Townsend 1928: 303), but he proposes that these convergences were, in fact, the outcome of similarities between Peirce and Royce.

In contrast to the very few commentators who note the similarities between Peirce and Hegel, there are others who focus on their philosophical differences and Peirce’s occasional attempts to distance himself from Hegel. It is certainly true that there is evidence, in Peirce’s work, of his rejection of Hegel. As Nagl observes (2014: 431), quoting Rockmore (1999: 179), some of these divergences are highlighted by writers who, as modern pragmatists, are reticent about the Hegelian origins of their own philosophical tradition. But, as argued above, Peirce’s comments should also be read in the intellectual context in which he was writing. When he highlights his own position *contra* Hegel, he is often able to assume that any deeper convergences between their thought would be recognised by his audience. Indeed, Peirce’s occasional use of German terminology, such as *Bestimmen* and *aufheben* indicate that he, and his readers, were familiar with the central concepts of German Idealism. Perhaps his indebtedness to Hegel emerges more clearly when Peirce frames it in a more oblique manner. On one occasion, for example, Peirce states that, in contrast to contemporary American and English institutions “the German universities have been the light of the whole world” (EP2: 47).

In the context of the potential connections between Peirce and Hegel, it is also useful to set to one side those potential links which commentators have also identified between Hegel and Saussurean semiology. A primary advocate of these connections has been Derrida (1982) who highlights that Hegel, in his ‘*Philosophy of Mind*’, makes a critical distinction between ‘symbols’ (which

have an analogous connection with what they connote) and ‘signs’ which form an arbitrary link (Hegel: [1830] 1894: 458)

The *sign* is different from the symbol: for in the symbol the original characters (in essence and conception) of the visible object are more or less identical with the import which it bears as symbol; wherein the sign, strictly so-called, the natural attributes of the intuition, and the connotation of which it is a sign, have nothing to do with one another.

On this basis, Derrida suggests that Hegel drew an early distinction between Saussurean signifiers and signifieds. Modern commentators (Salter: 1992; Burns: 2000), however, argue that Derrida overstates his case, whilst accepting that there is some truth in his claims. For example, Salter confirms his “belief in the potency of Hegelian semiotics” (Salter 1992: 176) and Burns concludes that “we are in fundamental agreement with Derrida that the influence of Hegel’s philosophy generally, and of Hegel’s theory of the sign in particular, on Saussure’s *Course in General Linguistics* is great indeed” (Burns 2000: 19). Elsewhere, Wood argues that, for Hegel, signs operate in “the realm of what Hegel calls *Objective Spirit*, so called because it contains the institutions and practices, originating in individual subjectivity, that live on in objectivity by being passed on to others through the use of signs in linguistic mediation” (Wood 2008: 615). In other words, Hegelian signs operate within a context of culture and language.

But these potential connections between Hegel and the semiology of Saussure need to be placed in their full context. Critically, Hegel’s discussion of symbols and signs falls within his broader discussion of language. As such, it is not surprising that links to modern linguistics are found by Derrida and, indeed, by other commentators. But what should be emphasised is that Hegel’s analysis of language is quite distinct from his dialectical approach to cognition which is discussed in this essay. This separation is important. It will be argued that Peircean semiotics is firmly rooted in Hegelian thought and that these origins can be found in his dialectical account of concept formation. But this claim is quite different to that of Derrida regarding the origins of modern linguistics. This essay does, as a result, agree that Hegel is a semiotician *avant la lettre*, but not in the way that is proposed by Derrida. Whilst Saussure is primarily concerned with linguistics and culture, Peirce, instead, is focused on the epistemological aspects of Hegel’s philosophy and how these underpin a semiotic theory of knowledge which explains the *empirical* world.

Overall, however, in summarising the relationship between Hegel and Peirce, the most striking observation remains the fact that modern philosophers seldom include Peirce’s theory of signs in their discussions. This is the case with Stern, but it is also characteristic of other commentators. Peirce’s semiotics seem to be isolated from his wider philosophy by a twentieth century division

that wishes to impose a separation between semiotics (and its cultural overtones) and epistemological philosophy. It can be concluded, as a result, that there are two main issues which need to be considered when comparing Hegel and Peirce. Firstly, there are, surprisingly, very few such comparisons. Secondly, what has been written is primarily focused on Peirce's categories, his logic, and the extent to which he distinguishes his own thought from that of Hegel. These factors mean that Peirce's own epistemology often becomes isolated from his semiotics. An aim of this essay is to demonstrate that this separation is mistaken; Peirce's semiotics is part of, and fundamentally stems from, his account of cognition which, in turn, is Hegelian in nature.

## Hegel and Vygotsky; Peirce and Vygotsky

The influence of Hegel on Vygotsky is far better documented. This is largely because Vygotsky openly acknowledges his debt to Hegel and does not seek to create distance from him. Despite this, however, the treatment of Vygotsky's relationship with Hegel is still often marginalised by modern commentators. This, as will be highlighted, is largely the result of twentieth century attempts to recruit Vygotsky into the social constructivist fold. As a result, the secondary literature often notes that Vygotsky was influenced by Hegel but does not bring this critical aspect to the fore.

Van Der Veer and Valsiner's *'Understanding Vygotsky: A Quest for Synthesis'* (1991) provides a good example of how the connection between Hegel and Vygotsky is often framed. They acknowledge that these connections exist; they highlight that Vygotsky read Hegel in his youth, that Hegel's dialecticism impacted upon him (Van der Veer and Valsiner 1991: 322), and that Hegel's notion of 'sublation' is present in Vygotsky's work (Van der Veer and Valsiner 1991: 278). But the Hegelian impact on Vygotsky's dialectical psychology is seldom placed centre stage. Hegel is seen as one of many influences on Vygotsky, rather than the philosopher who primarily helped frame his thought.

Bakhurst picks up on Vygotsky's debt to Hegel. He states that he is convinced that Vygotsky "should be seen against a philosophical tradition [of] 'high rationalism'" (Bakhurst 2007: 58) and he naturally includes Hegel within this. But he also acknowledges that "many of Vygotsky's contemporary followers will be sceptical. They will grant that an appreciation of Vygotsky's favourite philosophers is sometimes relevant to understanding his ideas, just as it is also important to know something about the many psychologists he discusses. But it would be a mistake, they will argue, to emphasize the rationalist tenor of Vygotsky's thought" (Bakhurst 2007: 59). Amongst such sceptics could

be included Wertsch who, in the same volume (Wertsch 2007: 178–192), evaluates the idea of ‘mediation’ without mention of Hegel. Instead, he views this key concept in Vygotskian thought as being either social, or linguistic, or based on “natural language” (Wertsch 2007: 181). Elsewhere, Daniels, notes that “Vygotsky most definitely adopted a dialectical world view” (Daniels 2016: 36), but Daniels still insists that Vygotskian meaning is socially created rather than dialectically formed.

Some commentators, however, do insist that Hegel has a greater role in Vygotsky’s philosophy. Blunden (2017 132–145), for example, provides a detailed account of the similarities between Vygotsky and Hegel and includes a useful discussion of Hegel’s *The Science of Logic*. He also highlights, quite rightly, the debt that Vygotsky owes to Hegel in terms of his ‘units of analysis’ (‘word meanings’). Elsewhere, Blunden also discusses the notion of ‘gestalt’ and argues that Vygotsky is influenced by Goethe who, in turn, had a major impact on Hegel. As such, he suggests that Vygotsky was influenced by this intellectual tradition from both sources (Blunden 2011: 457–471). Kozulin (1990: 118–121) also discusses the “problem of mediation” in Vygotsky and links this notion back to Hegel.

However, a more sustained analysis of Hegel’s influence on Vygotsky is provided by Jan Derry. She not only situates Vygotskian thought within a Hegelian context, but places this within a wider Spinozist framework. Derry correctly insists that Hegel represents “the most significant philosopher for Vygotsky” (Derry 2013: 105) and she discusses the relationship between Spinoza, Hegel, and Vygotsky. Importantly, she highlights that none of these philosophers accept a ‘correspondence theory’ of truth and she states that “for Vygotsky, a concept does not correspond to an object but enables thinking by including the object ‘in a complex system of mediating connections and relations disclosed in determinations of the concept’” (Derry 2013: 129). This is a critical proposition that, as we will see, also echoes Peirce. It contains the important assertion that thought determinations define the nature of objects and that these, in turn, form mediating entities. This is one of the most important areas of convergence between Peirce, Hegel, and Vygotsky. Derry successfully identifies two of this triumvirate, but Peirce, unfortunately, does not feature in her discussion.

Derry’s treatment of Vygotsky is also limited in other respects. It is mainly concerned with a defence of Vygotsky against the charge, made by Wertsch, that the latter’s work represents a form of “decontextualised rationality” (Derry 2013: 6). Derry makes a strong case in favour of Vygotsky and demonstrates that his rationality is, in fact, embedded in the mind’s construction of objects. But one effect of this is to draw her away from a wider discussion of Hegel’s dialectics. Moreover, Derry’s treatment of semiotics also reflects the constructivist approaches of Halliday and Kress, (Derry 2013: 41) and this deflects her from

Peircean sign theory. However, in many ways, Derry's work remains philosophically close to the current discussion.

Given the above discussion, it is unsurprising that there is also scant analysis of any potential influence of Peirce on Vygotsky. Any which may have existed is almost certainly the result of Vygotsky's interest in the American pragmatism. In an article entitled '*An Interesting Resemblance: Vygotsky, Mead and American Pragmatism*', Edwards (2007: 77–100), highlights the similarities between Vygotsky and Mead, but she concludes that "there is no indication that Vygotsky was influenced directly by Peirce's system of semiotics". Hans-Johann Glock (1986: 131–148) also suggests that Vygotsky and Mead adopt similar approaches, but he does not explore how such convergences might be rooted in their Hegelian heritage.

Overall, the secondary commentary on Hegel, Peirce, and Vygotsky reveals, therefore, relatively little focus on the inter-relationships which exist between them. There are several factors at play here, but it is evident that the main issue is the frequent reluctance of contemporary semioticians to recognise Hegel's influence on their discipline. Moreover, those few philosophers who have sought to compare Peirce with Hegel have made little attempt to evaluate the potential connections which may exist within Peirce's sign theory. Instead, these commentators have focused on other aspects of Peirce's philosophy – feeling, no doubt, that semiotics falls outside of their remit.

There are, however, other factors at work. One of these is the way Peirce uses the term 'sign' and his reluctance to use the word 'concept'. This makes it quite difficult for commentators to identify the underlying connections between Peirce's sign theory and Hegelian concept formation. This issue will now be considered in some detail. It forms yet another barrier preventing the relationship between the two philosophers being understood.

## The 'natural history of the sign'

One of the reasons why it is relatively simple to make a philosophical connection between Hegel and Vygotsky is that both thinkers are openly concerned with concept formation. One of the difficulties with Peirce, however, is that this aspect of his work is often obscured by the terminology he adopts. Critically, he uses a



language of ‘signs’ rather than that of concepts.<sup>1</sup> This makes his understanding of how concepts are formed quite difficult to follow for the modern reader. And this problem is exacerbated by the fact that modern semioticians tend to view ‘signs’ as experiential manifestations (e.g., culturally formed words, images etc) which are given meaning via interpretation. Within this framework, signs are predominantly construed as *external* experiential vehicles which are given *internal* meanings. Nöth (1995: 79), for example, notes that this is how signs are generally viewed when he notes that “in this handbook, the concept of sign is generally used in its broadest sense of a natural or conventional semiotic entity consisting of a *sign vehicle* connected with *meaning*”.

These difficulties create significant barriers to understanding the intent of Peirce’s semiotics. One of the main arguments of this essay is that Peirce, following Hegel, seeks to establish an account of concept formation. Simultaneously, however, he also wants to distance himself from Hegel’s dialectical solution by insisting that this activity is a matter of sign formation. As a result, he uses the terminology of signs, and their combination, rather than the language of concepts and dialecticism. Indeed, this can be observed in his classification of signs: the term ‘sign’ has an extremely broad meaning for Peirce. ‘Qualisigns’ are, for example, defined as ‘vague’ perceptions, whilst ‘propositions’, and ‘arguments’ are also classified as sign types (EP2: 292). And Peirce also argues that signs encompass all human thought when he asserts that “we think only in signs” (CP2: 397) and that “now thought is of the nature of a sign” (EP2: 380). For Peirce, therefore, signs are much more than experiential inputs given meaning by the mind; they are the very building blocks of thought itself.

It is a mistake, therefore, to assume that Peirce is using the word ‘sign’ in a manner that is common in twentieth century semiology. In contrast, Peirce is following Hegel. He seeks to explain how human concepts are formed and he uses the terminology of signs in this endeavour. Peirce makes his own position clear when he states that signs are fundamental to the “embodiment of thought” (EP2: 256):

---

<sup>1</sup> Despite Peirce’s infrequent use of the term ‘concept’ it is significant that the first line of his first major paper (*On a New List of Categories*) opens with a sentence that states: “This paper is based upon the theory already established, that the function of conceptions is to reduce the manifold of sensuous impressions to unity, and that the validity of a conception consists in the impossibility of reducing the content of consciousness to unity without the introduction of it.” (EP1: 1). This statement places Peirce’s semiotic project firmly in the tradition of Kant and German Idealism.



For since thought has no being except in so far as it will be embodied, and since the embodiment of thought is a sign, the business of logical critic cannot be undertaken until the whole structure of signs, especially of general signs, has been thoroughly investigated.

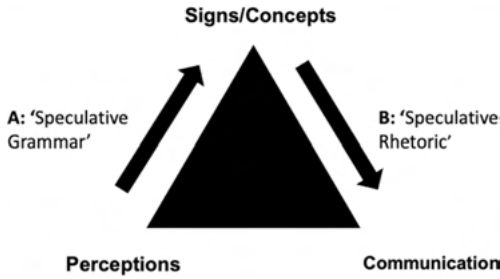
This perspective is a central feature of Peirce's semiotics. He believes that signs are how human thoughts are 'embodied'. They are not, therefore, experiential entities which are first observed and then interpreted. Instead, Peirce makes the much stronger claim that human thoughts are structured through signs; they are *how* the mind thinks; they determine the very forms of thought.

Peirce's position on the nature of signs can be elucidated in diagrammatical terms. In Figure 1, four distinct processes involving signs can be identified. They occur along two reflexive dimensions (A and B). The first dimension (A) involves the development of concepts from raw perceptions. In the medieval period, and for Hegel, this aspect of concept development was described as 'speculative' in nature (Deely 2009: 72). For Peirce, this dimension describes the formation of signs, and it forms the basis of his 'speculative grammar' which he describes as "an analysis of what kinds of signs are absolutely essential to the embodiment of thought" (EP2: 257). Critically, in this first dimension, concepts also have the reflexive ability to act as perceptual tools *through* which the world is experienced *as* signs.<sup>2</sup> This is a departure from empiricist accounts which maintain that concepts are positioned as the *outcomes* (rather than the determinants) of human experience.

In the second dimension (B), there is also a two-way process at work. Concepts formed in the first 'speculative' stage are now used in human communication and are employed, as symbols, in the construction of propositions. Peirce describes this second dimension as "speculative rhetoric", or the "art of putting

---

<sup>2</sup> Deely highlights the reflexive stage in the first dimension of Figure 1 as something which differentiates humans from animals. He argues that "the second mode which distinguishes *intellectus* from animal perception as such is the effect that it has upon perception when it returns to the order of what is sense-perceptible in order to affect that order in line with the animal nature of the one conceiving. In other words, the second mode of *intellectus* is that whereby it returns to its origins in *phantasiari* in order to serve the arrangement of objects proper to *phantasiari* to accord with the needs and desires of the human organism, the human animal, the human person. The Latins called this mode of *intellectus* 'practical' and recognised its status as derivative from the awareness distinctive of human understanding in the formula 'speculative understanding becomes practical by extension'" (Deely 2009: 72–73). The medievals, therefore, believed that concepts, developed in the 'speculative' stage, are employed in subsequent perceptual activity. This is the framework which Hegel, Peirce, and Vygotsky also adopt. They maintain that the world is also perceived *through* human concepts and this, of course, is another reason why the terminology of concepts and signs becomes so often conflated.



**Figure 1:** Signs: from Perception to Communication.

propositions into effective forms” (EP2: 19). But along this dimension, there is also another reflexive aspect. The signs which are used in such communication naturally evoke new concepts in others; dimension (B) thus has an interpersonal aspect to it. In Saussure’s semiology, his focus is placed on this second dimension when he analyses how meanings are formed in a culture. Hegel, Peirce, and Vygotsky, however, differ in their approach. Their central concern is with the ‘speculative’ dimension (A) where concepts are first established. It is in this context that Peirce insists that (EP2: 257):

Speculative Grammar ought not to confine its studies to those conventional signs of which language is composed, but that it will do well to widen its field of view so as to take into consideration also kinds of signs which, not being conventional, are not of the nature of language.

A central claim of this essay is that Peirce’s focus on ‘speculative grammar’ should be more fully recognised; it involves the semiotic formation of the mind’s conceptual apparatus. This process is called, by Vygotsky, the ‘natural history of the sign’ (Vygotsky 1978: 45). It takes place, as will be seen, within Peirce’s first and second trichotomies and, specifically, through the combination of his icons, indices, and symbols. These sign types frame the human intellect’s subsequent thoughts about the world; they act as ‘tools’ to understand it. Of course, Peirce also discusses, within his third trichotomy, the nature of human communication and how symbols can be used to form propositions, but this second part of his semiotics is always founded on the prior activity of concept formation. As such, signs are not simply experiential ‘vehicles’ awaiting interpretation; they are how the human mind develops its concepts and structures its very thoughts.

Importantly, Hegel also proposes a similar ‘speculative’ framework. He rejects the view that human concepts are formed through ‘interpretation’ and he attacks the conventional view that they are “mere forms of thought”. In

contrast, Hegel suggests ([1892] 2014: 187–188) a very different view of concept formation in which human concepts possess “a character of thorough concreteness”:

In the logic of understanding the notion is generally reckoned a mere form of thought, and treated as a general conception. It is to this inferior view of the notion that the assertion refers . . . that notions as such are something dead, empty, and abstract. The case is really quite the reverse. The notion is, on the contrary, the principle of all life, and thus possesses at the same time a character of thorough concreteness . . . And yet, as it was before remarked, the notion is a true concrete; for the reason that it involves Being and Essence, and the total wealth of these two spheres with them, merged in the unity of thought.

In the following chapters, it will be suggested that Peircean semiotics can be usefully construed within this Hegelian framework. Peircean signs are created by the mind, they enable us to form concepts, and they determine the nature of “concrete” reality.

A critic of this position will ask whether such a claim is supported by Peirce’s own words. Does Peirce, at any point, agree that Hegel influences his semiotic theory? Peirce is, of course, always keen to insist that he reaches his own philosophical conclusions independently of Hegel, but he acknowledges that (EP2: 143–144):

In regard to these, it appears to me that Hegel is so nearly right that my own doctrine might very well be taken for a variety of Hegelianism, although in point of fact it was determined in my mind by considerations entirely foreign to Hegel, at a time when my attitude toward Hegelianism was one of contempt. There was no influence upon me from Hegel unless it was of so occult a kind as to entirely escape my ken; and if there was such an occult influence, it strikes me as about as good an argument for the essential truth of the doctrine, as is the coincidence that Hegel and I arrived in quite independent ways substantially to the same result.

Leaving aside Peirce’s natural desire to compare himself with Hegel, and his reluctance to acknowledge his influence, Peirce clearly accepts that similarities do exist between their two philosophies. As has been highlighted, Peirce was surrounded by Hegelian thinking and it is probable that such “occult” activity may well have occurred. Elsewhere, Peirce also acknowledges that “when Hegel tells me that thought has three stages, that of naïve acceptance, that of reaction and criticism, and that of rational conviction; in a general sense, I agree to it” (EP1: 237). And he also agrees that “my thought resuscitates Hegel, though in stage costume” (CP1: 42). However, more convincing evidence that Peirce’s semiotic project has its roots within Hegelian thought can be found in the following passage. Discussing Hegel’s “objective logic” – Hegel’s term for the speculative stage of concept formation – Peirce states (CP2: 111) that:

But now we have to examine whether there be a doctrine of signs corresponding to Hegel's objective logic; that is to say, whether there be a life in Signs, so that – the requisite vehicle being present – they will go through a certain order of development, and if so, whether this development be merely of such a nature that the same round of changes of form is described over and over again whatever be the matter of the thought, or whether, in addition to such a repetitive order, there be also a greater life-history that every symbol furnished with a vehicle of life goes through, and what is the nature of it.

Here, Peirce asserts that a symbol requires to be “furnished with a vehicle of life” – an entity that allows it to grow.<sup>3</sup> And he asks if there is “a life in signs” which represents the evolution of a sign culminating in a symbol. This Hegelian manner of thinking is also evident in one of Peirce's earliest works, the *‘On a New List of Categories’*. Written in 1868, this paper explicitly positions the sign, using terminology which echoes Hegel, as a mediating pathway between ‘Being’ and ‘Substance’ (EP1: 6):

BEING,  
     Quality (Reference to a Ground),  
     Relation (Reference to a Correlate),  
     Representation (Reference to an Interpretant),  
 SUBSTANCE

Here, Peirce frames the sign as a mechanism enabling the human mind to move from the indeterminacy of ‘Being’ to the synthetic knowledge of ‘Substance’. This is an important aspect of Peircean sign theory which will be discussed later.

It has been noted that Vygotsky also claims that concept formation involves signs. As noted above, he talks of “the natural history of the sign” (Vygotsky 1978: 45) and he maintains that this forms the activity of concept development. Echoing Hegel and Peirce before him, Vygotsky explains how the human mind moves from its raw perceptions (“natural perceptions”) to the concepts of the “higher psychological processes”. In doing so, Vygotsky also adopts the Hegelian notion of conceptual evolution. As will be highlighted in due course, Vygotsky's “natural history” differs from Hegel and Peirce because he is less concerned with epistemological issues. But it is also clear that he shares their underlying framework.

---

<sup>3</sup> Beverley Kent in a short article (Kent 1977: 142–146) claims, when referring to this passage on ‘objective logic’, that she cannot find any subsequent reference to it in any of the classification schemes advanced by Peirce (Kent 1977: 145). I would suggest, however, that Peirce's ‘objective logic’ is the very process in his classification of signs through which signs combine with each other.

Of course, the belief that signs 'evolve' is well documented in the secondary literature (Nöth 2020: 182–191). Semioticians often refer to this process as 'semiosis'. But this activity is often construed in a particular manner: as a continuous action involving the *interpretation* and *re-interpretation* of signs. Eco, for example, talks of semiosis as follows: "at least since the Hellenistic period, we mean by semiotics the study of the phenomenon of semiosis, that is to say, the process through which humans emit and interpret signs" (Eco 2018: 344), whilst Hoffmeyer defines semiosis as "the process by which signs are exchanged" (Hoffmeyer 1996: 18). But these more modern views obscure, however, Peirce's deeper intent. He wants to understand how the sign *itself* evolves (as a concept) which can be used to understand the empirical world. In this respect, Peirce himself defines semiosis as an activity that takes place *within* the sign (EP2: 411):

But by 'semiosis' I mean, on the contrary, an action, or influence, which is, or involves, a cooperation of *three* subjects, such as a sign, its object, and its interpretant, this tri-relative influence not being in any way resolvable into actions between pairs.

These developing triadic relationships amount to more than an exchange of signs between individuals, or their on-going interpretation within a particular culture. Certainly, Peirce does conceive of semiosis as a continuous process, but his sign development involves more than the transmission (and interpretation) of signs in the second dimension of Figure 1. Semiosis, he argues, occurs as concepts are formed in the dimension he terms 'speculative grammar'.

At this point, however, it is important to step back one stage in our discussion. If an understanding of Hegel's influence on Peirce is to be clearly elucidated, it is essential to understand how Hegel's model of concept formation differs from modern accounts of this process. Such an analysis will reveal the connections that exist between Hegel and Peirce and will show how Hegel's own account differs radically from that of the twentieth century.

As will be discussed in the next chapter, the model of cognition that dominates much of modern culture construes concept formation as a process that primarily involves acts of 'interpretation'. And, critically, it will be shown how this perspective has filtered into much of twentieth century semiotics. Paradoxically, it is this modern cognitive model that has established the intellectual barriers which exist between parts of contemporary semiotics and the discipline which Peirce was the first to conceive.



---

## Part One: **Perception and the model of ‘secondary dualism’**





# 1 The model of ‘secondary dualism’

Semiotics is evidently concerned with how meaning is created. This can take place at either the social or individual level. The activity of meaning making is often separated, at least in the case of continental semiology, from the processes that are involved in the activity of perception. Semioticians, such as Saussure and Barthes, seldom explore this perceptual dimension because their primary concern is understanding how meaning is determined at a cultural level.

Peirce, however, differs in his approach; he sees his semiotics as both overlapping with, and extending, his account of perception and he is centrally concerned with the philosophical consequences of his account of this activity. As such, his semiotics is more epistemological in tone. Unsurprisingly, this creates certain barriers between his own work and that of twentieth century semioticians. At the heart of these divisions is the fact that Peirce advocates a different model of perception. In this context, it is important to identify what is meant by a ‘model of perception’ and how such models may impact on a semiotic theory of meaning making.

Several models of perception will be encountered in the course of this essay. These include the framework first advocated by Aristotle (which strongly influenced the premodern period), the model espoused by Hegel, Peirce, and Vygotsky, and those proposed by modern philosophers such as Merleau-Ponty (2012) and Noë (2004). These models of perception often have overlapping features, and some, indeed, borrow elements from previous models. For example, both Hegel and Peirce use aspects of the Aristotelian framework. But what is also clear is that none of these perceptual models, in themselves, are neutral in character. They bring, in their theoretical wake, differing accounts of *how* human perceptions are formed, *what* kind of entity ‘exists’ in a perceptual act, and *how* human perceptions relate to other parts of each cognitive model (e.g., the intellect). Moreover, each model has its own view on the balance of ‘active’ and ‘passive’ elements involved in perception. For example, they disagree on the extent to which perceptual acts are carried out by an *active* mind and how much they involve the world acting upon the *passive* mind. Additionally, the critical division between perception and concept formation is often placed in different locations by each model and this influences their respective accounts of meaning making. And these differences lead, in turn, to the question of whether meaning is formed purely by the mind, whether it already exists within perceptual content itself, or whether meaning is, in fact, created through the interaction of the mind with its empirical experiences.

This essay mainly focusses on two models of perception. The first of these emerged in the late seventeenth century and formed the foundations of British empiricism. It is associated with a cognitive framework in which the human mind inspects its sense data, in an atomised form, and this leads to the sceptical positions advocated by Hume. The second model evolved in the late eighteenth and early nineteenth centuries in response to the perceived failings of this empiricist template. It was initiated by Kant but was developed by German Idealism and it reached its apogee with Hegel. This second model is associated with a different terminology – that of indeterminacy, dialecticism, mediation, and the belief that both perception and reality are intrinsically relational. This is the model which influenced both Peirce and Vygotsky. They both recognised the flaws in the empiricist model which had been identified by German Idealism and this informed their own work. In the case of Peirce, his rejection of the empiricist template led to the development of his semiotic theory. With Vygotsky, his critique of the same empiricist position led to his rejection of the associationist accounts of child psychology which were dominant in his day.

This chapter begins with the model of perception proposed by the British empiricist tradition. It represents an essential background for our understanding of Hegel and Peirce. This model offers, at first glance, what seems to be a common-sensical approach to cognition. It makes a clear distinction between *what* the mind experiences and *how* the intellect subsequently thinks about those experiences. But this binary division determines a particular way of thinking about perception. It creates a framework which is inherently dualistic and, as a result, it leads to certain philosophical implications which will be evaluated during this chapter. The division of the mind that this model creates has significant effects in terms of how perception, and meaning making, are subsequently construed. It is a framework that will be called, for the purposes of this essay, 'secondary dualism'.

But why should we call this model 'secondary dualism'? It merits this term because it represents a form of dualism which exists exclusively *inside* the mind. It is, therefore, a division which is quite distinct from the more familiar form of dualism which Descartes (1641/1985) initiated between the mind ('*res cogitans*') and the world ('*res extensa*'). This Cartesian form of dualism separates human perceptions from the external world and leads to the view that there is an unbridgeable gap between what Kant later called 'phenomenal' experience and the 'noumenal' world behind it. But 'secondary dualism' is quite different from this. It is a new, and arguably derivative, form of dualism which separates the internal representations of the world in the mind from its thoughts about those perceptions. Paradoxically, 'secondary dualism' has often been proposed by philosophers as a potential way to avoid the more damaging effects of 'primary dualism'. It seems, after all, to afford a certain kind of knowledge about

the contents of the human mind. It is claimed, for example, that if knowledge of the noumenal world cannot be established, then, perhaps, some knowledge of our sense impressions themselves is achievable. This, they argue, might be a way to avoid the problems that Descartes has created for philosophy and create a foundation for human knowledge. But leaving this question aside for the time being, it is clear that ‘secondary dualism’ establishes a new form of dualism and that it is one that is positioned *within* the mind.

It must be noted, of course, that Peirce never uses the term ‘secondary dualism’ himself. But his critique of this model of cognition is often the driving force behind his semiotic theory. Peirce often describes his own critique of the conventional model of perception as an attack on ‘nominalism’, but the term ‘secondary dualism’ is, in some ways, more appropriate for his target. The latter is much broader in its scope, and it is also more specific in identifying the central weakness of nominalism. As a term, nominalism tends to limit the scope of its philosophical effects to the specific issue of giving identities to objects. But ‘secondary dualism’, whilst encompassing this problem, also addresses the more extensive ramifications of modern philosophy’s desire to divide the mind in two.

## 1.1 The ‘mirror of nature’

‘Secondary dualism’ construes the human mind as a mental ‘arena’. On the one side of this internal mental ‘space’ are the perceptions (or sense data) that the mind ‘receives’ from the ‘external’ world. These are often described as ‘representations’ of external reality and are ‘viewed’ by the mind, on the other side of this internal dualism, as if they were reflected in a ‘mirror’. This analogy is captured by Richard Rorty in his book called *Philosophy and the Mirror of Nature*, and it is also why he construes the mind as being like a “glassy essence” (Rorty 1980: 42).<sup>4</sup> In this model, our cognitive activities are thus construed as if they are a metaphorical “inner eye” (Rorty 1980: 45) which inspects its sense data. Since the seventeenth century, this model has come to dominate the way in which modernity construes human cognitive activity. It is important, as a result, to consider some of the assumptions that underpin its model.

Firstly, this model insists that there is a fundamental ‘gap’ between our sense data and our thoughts about them. This dualism has certain characteristics. The

---

<sup>4</sup> Rorty borrows the notion of ‘glassy essence’ from Isabella’s speech in *Measure for Measure* (Rorty 1980: 42). It is coincidental that Peirce also published a paper using the terminology of the ‘glassy essence’ in 1892 (EP1: 334–351).

two activities in the mind – images reflecting in the 'mirror' of the mind, and the mind's interpretations of them – are felt to be of very different kinds. The 'reflections' in the 'mirror' are perceptual, whilst the thought processes about them are intellectual. It follows from this that the conceptual and the perceptual are held distinct from each other and, in addition, it is maintained that the latter always precedes the former. Moreover, the reception of sense data is often construed as being *passive*, whilst the mind is viewed as *active*. It selects from the sense data present on the 'mirror' and it decides what is important. This immediately builds an element of subjectivity into the mind's reflective activities and informs the view that human knowledge is interpretative. Finally, this model even has an implicit layout. The intellect is positioned at 'right angles' to its mental 'mirror'. McDowell describes this way of thinking about human cognition as the "sideways-on picture of the understanding and the world" (McDowell 1994: 82).

It is clear, therefore, that this cognitive model comes embedded with a set of assumptions about the intellect and its potential relationship with its sense data. But this is only the beginning of the story of 'secondary dualism'. Critically, the model also insists that sense data are experienced in a particular format; they are always experienced as *individuated* sense impressions rather than as a continuum. As a result, they can only be perceived by the mind as atomised units. This has two far reaching consequences. Firstly, an individual sense datum cannot be observed which consists, simultaneously, of two qualities. It is not possible, for example, to have a sense impression that is both blue and yellow. If this were to occur, then, of necessity, it would be experienced as two distinct sense data. It follows from this that sense data are always exhausted by a single quality. This is one of the main effects of nominalism; the mind's act of giving an identity to a particular sense datum demands a separation of it from other sense data. Secondly, this effect of atomising sense data leads directly to the conclusion that it is not possible to *observe* any potential connections which may exist between sense data; they can only be *inferred*.

However, another effect of this cognitive model is often viewed in a more positive light. As noted earlier, some philosophers argue that it is possible, at least, to have direct access (or 'direct acquaintance') with the mind's sense data. It is suggested, therefore, that even though access to the noumenal world is impossible, the intellect enjoys knowledge of its sense data *qua* sense data. For example, I cannot know that a particular external object is 'red', but I can be certain that I have a sense datum that looks 'red' to me. This view is accepted by some philosophers as a foundational basis for human knowledge and it often leads to phenomenological theories of cognition.

However, when the consequences of this cognitive model are explored, the outcome is usually one of philosophical scepticism. If potential linkages between

sense data cannot be observed by the mind, then it follows that any connections which may (or may not) exist in the world cannot be known. This philosophical problem comes in many guises, but one of the most famous is Hume's claim that causation cannot be perceived in the world. For example, if we observe billiard ball 'a' hitting billiard ball 'b', Hume asks why we should expect a second ball to move as a result (Hume 2007: 21). He claims that causation cannot be perceived and that our beliefs in particular effects are thus based on 'habit'. But this sceptical conclusion stems from the atomistic model that Hume has adopted. For if it were possible to observe an act of causation between the movements of ball 'a' and ball 'b' (a flash of light might appear, for instance, as a new 'sense impression' (c)), then a new problem would simply be created. Hume would seek a connection between the movement of ball 'a' and the new sense impression 'c'. Hume is thus condemned to an infinite regress – searching for putative 'connections' that his model of perception will always deny him. The same argument can also be applied to Hume's claims about induction (Hume 2007: 18–29). He argues that 'necessary connections' between sense data cannot be observed; 'constant conjunctions' are all that can be experienced. But Hume's 'problem of induction' is based on his same assumption about perception. The atomisation of sense data, intrinsic in the model of 'secondary dualism', results in Hume's inability to experience linkages in the world.

The model of 'secondary dualism', however, also has other critical effects. Leaving aside the problems of philosophical scepticism, the interpretive mind, in this cognitive model, is always positioned as being *relative* to its sense data. It follows from this that human knowledge of the world must be relative too. And this has resulted in a series of theoretical positions emerging in the last two centuries. In particular, the view that the mind can only achieve subjective knowledge has become widespread in the modern age. Moreover, many theorists have gone still further and raised this subjectivist perspective to a social level. They have concluded, as a result, that any knowledge possessed by a group of individuals, or by society, must also be relative. This conclusion leads to the belief in 'ideology' and 'false consciousness' which emerged in the nineteenth century. In the twentieth century, this position has developed still further with the emergence of post-structuralism and post-modernism. Both intellectual movements assert that human knowledge is separated from reality and that, as a result, human understanding floats free from the world. Baudrillard, for example, maintains that all that can be experienced are 'simulacra' which "bear no relation to any reality" (Baudrillard 1988: 170). Such conclusions derive directly

from the template of 'secondary dualism' and its separation of sense data from each other and from the world.<sup>5</sup>

The influence of the 'mirror' model in the modern world can also be recognised in other ways. For, whilst it underpins the tradition of philosophical scepticism, the model simultaneously provides a theoretical platform for science itself. How does this happen? Paradoxically, 'secondary dualism', by insisting that the mind's sense data are no more than isolated data points, establishes a *modus operandi* for the physical sciences. Scientists take their observed facts and, assuming that there are no necessary connections between them, they seek to establish such connections through experimental 'constant conjunction'. Using statistical methods, these connections can be elevated to a new level; they can be described as 'real' or 'objective', rather than merely incidental. The scientific method thus establishes a hold over the modern imagination through its ability to overcome the problems created by 'secondary dualism'. Through such mechanisms the quantitative sciences establish the 'laws' of nature and determine their 'objective' constructions of the world. It is a testament to the ubiquitous power of the secondary dualist model in modern culture that this cognitive framework, therefore, forms both the basis of the scientific method and its theoretical twin – philosophical scepticism. These two perspectives are conventionally placed in opposition to each other; in fact, they are rooted in the same cognitive framework.

It has already been noted that 'secondary dualism' encourages the philosophical tradition of phenomenology (Glendinning 2007). This school of thought asserts that, because the mind has direct access to its sense data, it can *construct* its world. This, in turn, has developed, in the twentieth century, into beliefs in 'social constructivism' which assert that human concepts and meanings are formed through collaborative social activity. Rejecting the view that meanings exist in the

---

5 Latour is particularly keen to point out the problems that arise from the model's dualism. In relation to postmodernism, Latour emphasises the disconnects that it leads to (Latour 1993: 64–65):

The postmodern condition has recently sought to juxtapose these three great resources of the modern critique – nature, society, and discourse – without even trying to connect them. If they are kept distinct, and if all three are separate from the work of hybridization, the image of the modern world they give is indeed terrifying: a nature and a technology that are absolutely sleek; a society made up solely of false consciousness, simulacra and illusions; a discourse consisting only in meaning effects detached from everything; and this whole world of appearances keeps afloat other disconnected elements of networks that can be combined haphazardly by collage from all places and all times. Enough, indeed, to make one contemplate jumping off a cliff.

world, social constructivists argue that they are formed through the social practices in a culture. An example of this view can be found in Berger and Luckmann's *The Social Construction of Reality* where they argue that "the common objectifications of everyday life are maintained primarily by linguistic signification" (1967: 39–40). In the following decades their contention that reality is 'constructed' has expanded to include an array of other social phenomena. As Hacking notes, there are now academic works elucidating, for example, the social construction of the child, the emotions, gender, illness, knowledge, immigrants, and schooling (Hacking 1999: 1). At the heart of these perspectives, however, is the fundamental belief that human concepts are relative to the world, and they reflect the values and social practices of a culture. Hacking, for example, states that (Hacking 1999: 33):

Constructionists tend to maintain that classifications are not determined by how the world is but are convenient ways in which to represent it. They maintain that the world does not come quietly wrapped up in facts. Facts are the consequence of ways in which we represent the world. The constructionist vision here is splendidly old-fashioned. It is a species of nominalism.

Hacking notes here, and correctly so, that social constructivism can be traced back to philosophical nominalism. This tradition has a long history with origins in the medieval period. The nominalist perspective, however, comes to the fore, in the seventeenth century, when Locke makes a distinction between 'real essences' and 'nominal essences'. In the absence of an ability to know real essences through direct experience, Locke argues that the human mind must make do with 'nominal essences'. The latter, he argues, are formed as the mind observes its sense data. The intellect notices a number of similarities between atomised particulars and concludes that certain 'kinds', or essences, exist. These, however, are nominal, rather than real, because they are formed by the inspecting mind.<sup>6</sup> As a result, Locke maintains that the mind cannot grasp universals as they might exist in reality. Instead, it can only work with constructed versions of them. Universals, or general concepts, therefore, fall into the same theoretical camp as both causation and the inductively established laws of nature; they become *constructions* of the mind. As Forster states (2011: 5):

Nominalists hold, then, that the choice of a conceptual scheme is determined by knowers' interests rather than by objective features of the world. For them, talk of truth and falsity is possible only within a framework of laws and general concepts, and any such framework is

---

<sup>6</sup> There is a critical difference between Locke's nominal and real *essences* and Leibniz's nominal and real *definitions*. By shifting his emphasis from 'definitions' to 'essences', Locke renders the distinction dualistic, and mind dependent. Leibniz, in contrast, insists that 'nominal definitions' still remain reflective, at least partially, of reality.

justified either because claims made using it can be reduced to claims about individuals or because it provides a useful tool for anticipating experience. Either way, for nominalists, laws and general concepts are artefacts of economizing minds to which nothing in reality literally corresponds.

It is of relevance to our later discussions that this nominalist account of essence stands in contrast to the cognitive model that preceded it. As Rorty explains (Rorty 1980: 17–69), the 'mirror' model of cognition replaced an earlier Aristotelian account of how essences (and universals) become present in the intellect. In this earlier model of perception, the human mind grasps the 'forms', or 'essences', that it encounters in the world. This pre-modern template differs from the Lockean approach in which the mind observes individual instances of 'x', compares them, and asserts they are like each other. In Locke's model, a universal 'x' is purely a creation of the mind, whilst, in the Aristotelian model, the essence of 'x' exists both in reality and as it is instantiated in the intellect (Rorty 1980: 45):<sup>7</sup>

But in Aristotle's conception intellect is not a mirror inspected by an inner eye. It is both mirror and eye in one. The retinal image is *itself* the model for the 'intellect which becomes all things', whereas in the Cartesian model, the intellect *inspects* entities modelled on retinal images. The substantial forms of frogness and starness get right into the Aristotelian intellect and are there in just the same way they are in the frogs and the stars – *not* in the way in which frogs and stars are reflected in mirrors. In Descartes's conception – the one which became the basis for 'modern' epistemology – it is *representations* which are in the mind. The Inner Eye surveys these representations hoping to find some mark which will testify to their fidelity.

In the model of 'secondary dualism' it is also clear that a particular order effect is at work in relation to the notions of 'form' and 'content'. In its template, the contents of the mind are always laid out on its metaphorical 'mirror' and only later does the intellect give them an identity, or form, through interpretation. The content of a concept comes first and the mind then imposes form upon it. This is important to our later discussions because both Hegel and Peirce maintain that this order effect can be reversed. They argue that form can initiate human knowledge and that content can subsequently impact upon it. This is anathema to the

---

7 The Aristotelian account of perception is interesting in that the human mind is seen as being relatively *passive* in experience. As Rorty highlights, a form, or essence, simply gets into the mind of the perceiver – it is not perceived by a mind and then *actively* interpreted. This lingering passivity in human perception is still partially evident in the philosophy of Hume. Even for this arch-empiricist, the sense data that the mind perceives are construed as sense *impressions*. This terminology, in itself, suggests that there is some latent passivity retained in his perceptual model.



secondary dualist who believes that the provision of form is the preserve of the active mind.

In this secondary dualist structure, of course, the imposition of form onto content also entails that meaning making is the sole responsibility of the interpreting mind. The images received on the 'mirror' of the mind lack any intrinsic meaning. As Whitehead observes, this results in a view of the physical world which is entirely devoid of meaning. He notes that nature is "a dull affair, soundless, scentless, colourless; merely the hurrying of material, endlessly, meaninglessly" (Whitehead 1995: 69). The lack of intrinsic meaning in the world is a common theme in modern philosophy; it is another offspring of 'secondary dualism'.

Finally, we should also touch on one further consequence of this cognitive model. It was noted earlier that the secondary dualist contends that the mind has direct access to its sense data. This can lead to the belief that such sense data can act as a *foundation* for human knowledge (Derry 2013: 126–132). Foundationalist views are espoused, for example, by Bertrand Russell and his notion of 'direct acquaintance' (Russell 1959), whilst Ayer argues that propositions about the world cannot be maintained unless they can be validated by direct observation (Ayer 1936). Such positions are supported, however, by the secondary dualist belief that the mind knows the identity of such validating (or, indeed, invalidating) sense data.

At this point, Wilfrid Sellars asks whether the claim to know the identity of our sense data is justified. In his *'Empiricism and the Philosophy of Mind'* (Sellars 1997), Sellars maintains that such a view entails the claim that the mind experiences its sensations in a non-inferential way. Attacking this position, Sellars questions whether the intellect can, indeed, know the identity of a particular sense datum without comparing it with something else. He concludes this is not possible; the mind can only know the identity of a particular sense datum inferentially and that, as a result, human perceptions are, necessarily, *relational* entities. Sellars describes the invalid assumption that the mind knows the identity of its sense data as the *'Myth of the Given'* and he states that "being a sense datum, or sensum, is a relational property of the item that is sensed" (Sellars 1997: 15). And it follows from this conclusion that perceptions cannot act in a foundational manner. As Rorty concludes (1997: 4–5), following Sellars, "we cannot do what some logical positivists hoped to do [...]. In particular, we cannot perform such an analysis by discovering the 'foundation' of empirical knowledge in the objects of 'direct acquaintance', which are 'immediately before the mind'".

As was noted above, Sellars acknowledges that this philosophical position has certain similarities with Hegel. Indeed, he describes them as being "incipient

*Meditations Hegeliennes*" (Sellars 1997: 45). Sellars does not enquire whether the same view is adopted by Peirce, but this is, in fact, the case. Hegel and Peirce are united in their early rejection of the '*Myth of the Given*'. And this shared insight forms the starting point for their respective accounts of perception and concept formation.

## 1.2 Problems with 'secondary dualism'

It has already been noted that the cognitive model of 'secondary dualism' can be challenged in several ways.<sup>8</sup> It places the human intellect in a position where it can neither see 'behind', nor 'between', its sense perceptions. It transforms each sense datum into an individual, atomised, and isolated element

---

<sup>8</sup> Alva Noë is also a critic of 'secondary dualism'. Whilst he does use this specific term, he emphasises how this model employs visual metaphors to understand cognition, calling this the "snapshot conception of visual experience" (Noë 2004: 35). He argues, like Peirce, that the mind is, in fact, embedded in the world (Noë 2004: 24), and that it does not experience reality as a series of 'pictures'. In contrast to 'secondary dualism', Noë suggests, in his 'enactive' model, that human perception is more like the sense of touch: "vision is touch-like. Like touch, vision is *active*" (Noë 2004: 73). He also maintains that "to perceive you must be in possession of *sensorimotor bodily skill*" (Noë 2004: 11). Such active skills enable the human mind to work out how perceptions change according to perspective etc. This creates an important parallel with two aspects of Peircean thought.

Firstly, Peirce's concept of secondness enables the human mind to find its limits in the world. Noë suggests, likewise, that "the process of perceiving, of finding out how things are, is a process of *meeting the world*; it is an activity of skilful exploration (my italics) (Noë 2004: 164). In this context, is not surprising to find that Noë, like Hegel and Peirce, seeks to revise where the line between the perceptual and the conceptual should be drawn. He maintains that "I propose that we should think of sensorimotor skills as themselves conceptual, or 'proto-conceptual' skills. Sensorimotor skills can play much of the role that concepts have been called on to play in Kantian theories of perceptual experience (such as McDowell's)" (Noë 2004: 183). And, moreover, Noë suggests that these skills allow the mind to move from indeterminate, to more determinate, perceptions in a manner that echoes the action of Peirce's category of secondness (Noë 2004: 193).

Secondly, Noë makes a distinction between two forms of perception. He often speaks of "a duality of content" (Noë 2004: 163). He argues that "perceptual content has a dual aspect. There's the way experience presents the world as being, as it were apart from your perspective. This is one aspect of its content. And there is *the way* the world is presented in experience, a way that always incorporates some reference to how things look or sound or feel from your vantage point" (Noë 2004: 163). This distinction appears to parallel the respective roles of the icon and the index for Peirce. The former provides the pure 'form', without any empirical baggage, whilst the latter embeds the 'object of thought' in the world through the relationships between it and the perceiver (see chapter 10).

laid on the metaphorical 'mirror' of the mind. It is no surprise, as a result, that this leads to the philosophical scepticism advocated by Hume.

At a purely intuitive level, however, there seems to be something incorrect about the model. The empirical world does not unfold before our eyes as a series of atomised perceptions which are spontaneously linked together by the mind. Instead, it is experienced, quite naturally, as a continuum and from this continuum the mind picks out different phenomena such as objects, qualities, and events. This counters the perceptual model espoused by Locke and Hume. In due course, this idea of a perceptual continuum will be encountered again; it represents a key feature of Peirce's account of perception; it is what he terms 'synechism' (EP1: 363).

But there is another aspect of 'secondary dualism' which undercuts its validity. The model places sense data on one side of its mental divide and the intellect on the other. But there must be something incorrect about this perspective because, evidently, both elements are *inside* the mind. The model thus assumes that human sense data form a kind of reified experience. They are in the mind, but they enjoy a special status there. They are present in the same way that images are reflected in mirrors and, as such, they possess quasi 'external' characteristics. This is clearly at odds with their fundamentally mental status. Secondary dualism thus seems to want it both ways. It asserts that the mind possesses two types of entity – one that has phenomenological (and real?) properties and another (the inspecting mind) that is intellectual. The divisions of 'primary' dualism are thus re-created, but they are now located within the mind itself. This is a philosophical sleight of hand which often goes unnoticed. Secondary dualists claim to have overcome the problem of the 'veil of perception' (by claiming direct access to the mind's sense data) but, in fact, they have reformulated the original dualist problem in phenomenological form.

But there is also another, and more fundamental, weakness in this cognitive model. As noted earlier, the model suggests that there is a division between the mind's *known* sense data (in the 'mirror') and the mind's subsequent interpretation of them. But, following Sellars, this template can now be challenged. If the identity of a sense datum is, in fact, unknowable, then the binary distinctions which the model sets up are seriously undermined. The secondary dualist insists that the mind knows the identity of a particular sense datum, but it fails to recognise that such direct perceptual knowledge is an interpretation because the sense

---

Having said this, Noë does not invoke semiotic terminology and he has no use for Peirce's 'categories'. His work, however, represents a persuasive contemporary attack on 'secondary dualism' which echoes several aspects of Peirce's philosophy.

data has *already* been given an identity. As a result, the secondary dualist model entails interpretation on *both* sides of its claimed dichotomy.

At this point, the foundations of 'secondary dualism' begin to dissolve away. It is no longer possible to position the mind as being relative to its known sense data. Advocates of 'secondary dualism' can, of course, respond by falling back to a deeper position. They can accept that the mind does not, in fact, know the identity of its sense data and agree that it only experiences such sense data in the form of perceptual hypotheses. But, with this move, the dualistic structure of the model evaporates since secondary dualists can no longer divide human cognition into neat binary categories of the 'known' and the 'interpreted'. Equally, if everything is a hypothesis, the intellect must abandon its 'sideways view' of reality. Instead, the mind becomes immersed in its perceptions, and it tries to make sense of them by forming hypotheses. As will be seen in chapter four, this is precisely the position espoused by Hegel, Peirce, and Vygotsky. They begin their individual accounts of human perception by readily accepting that the mind cannot know the identity of its sense data and that it must make do with perceptual hypotheses.

However, before commencing a detailed analysis of the relationships between Hegel, Peirce, and Vygotsky, it is important to understand how 'secondary dualism' has impacted upon modern semiotics. As a discipline, semiotics is concerned with how meaning is created, and it maintains that the 'sign' forms the centrepiece of such endeavours. It is highly relevant, therefore, to understand the influence of 'secondary dualism' on modern semiotic theory. When this is explored, it becomes clear that such theory has seldom confronted the issues inherent in 'secondary dualism'. Many semioticians have, in fact, accepted its perceptual template without question, or have adopted a framework of 'interpretation' without recognising that this approach to meaning making finds its roots in a particular model of cognition.

As a result, it is useful to carry out a brief overview of twentieth century semiotics and to establish how much of modern semiotic theory has, in fact, been predicated on the assumptions of 'secondary dualism'. Such an analysis will also help uncover the truly distinctive nature of Peirce's own semiotic theory.

## 2 Semiotics and ‘secondary dualism’

The influence of ‘secondary dualism’ reaches across many aspects of contemporary philosophy. The full extent of its dominance is evident, as has been noted, in the way that it successfully underpins both the tradition of Western scientific thought and Humean scepticism. The dualism that it entails drives a pervasive separation of meaning from experience. The mistaken belief that the mind knows the identity of its sense data leads to the conclusion that human knowledge is interpretative, subjective, or ideological in nature.

In this chapter, we will explore how this cognitive model has also infiltrated semiotic thinking. Such an analysis is critical to understanding Peirce because, as a philosopher writing under the influence of Hegel, he was keenly aware of the problems that ‘secondary dualism’ entails. Indeed, Peirce’s semiotics can even be characterised, in part, as a systematic attempt to avoid these philosophical difficulties.

In the course of this brief overview of modern semiotic theory, some key aspects of Peirce’s thinking will be touched upon in order to illustrate the distance that exists between his own thought and that of ‘secondary dualism’. Readers who are already familiar with Peirce may find some of these comparisons initially surprising. But the differences discussed are, in fact, an illustration of how commentators have tended to marginalise Peirce’s own views on perception. If we view Peirce, however, from a Hegelian perspective it is possible to identify the points of difference that exist between Peirce and the modern semiological tradition.

This chapter will begin with a brief evaluation of Saussure as one of the key founders of modern semiotics. As will be observed, Saussure accepts, and indeed embraces, the core assumptions of ‘secondary dualism’. Our discussion will then consider other developments in late twentieth century semiotics. These have taken the discipline in directions which, to varying degrees, have also subscribed to the core tenets of ‘secondary dualism’. But this has not prevented such attempts from enrolling Peirce in their analyses.

### 2.1 The Saussurean tradition

Early developments in twentieth-century semiotics were heavily indebted to linguistics and Saussure’s own background in this specialism had the effect of pushing the emerging discipline in directions that were linguistic in orientation.

This shifted the potential focus of semiotics away from the deeper epistemological issues that had been the main concern of Peirce.

However, Saussure does not just ignore these philosophical issues; more damagingly, he adopts a theoretical position that entails significant philosophical consequences, and he does so without recognising its effects. In particular, Saussure accepts 'secondary dualism' so completely that his distinction between the signifier and the signified is one of its more distinctive expressions. In Saussure's model of the sign, the 'signifier' replaces the image in the 'mirror' of the mind and the 'signified' is the mind's interpretation of it. And, moreover, in line with the interpretative 'gap' entailed by this model, Saussure celebrates these two features as being connected on an *arbitrary* basis. In other words, Saussure re-affirms the framework of 'secondary dualism' and expresses it in semiological terms.

Following the assumptions of 'secondary dualism', Saussure argues that meaning is created, not through reference to the world, but through the place of each signifying unit within a system of 'langue'. He explains (Saussure 2012: 107) that "just as the game of chess is entirely in the combination of the different chess pieces, language is characterised as a system based entirely on the opposition of its concrete units". And it follows from this that Saussure's sign theory is synchronic in character. Not only does he detach meanings from the world, but he also provides little account of how such meanings can be created, or how they might evolve over time. His position is inevitable given that Saussure's engine of meaning-making is already sealed off from reality through his ready acceptance of 'secondary dualism'. Saussure's revolutionary step is to argue that meaning is created within a structured system (langue), but what he is really doing, like Hume before him, is to expound a theory of meaning creation which is fundamentally divorced from reality.

But Saussure's sign system still needs to be rooted in reality in some way or other; otherwise, his system of linkages between signifiers and signifieds would have no footing in reality whatsoever. And so, it becomes clear that Saussure embraces the contradictory position highlighted earlier. On the one hand, he proclaims that meanings are arbitrary whilst, on the other, he quietly accepts that we know the identity of each signifier. The underlying weakness of his position becomes even more evident if his account of meaning making is analysed in more detail. He claims, for example, that meaning is formed by the *differences* within an 'associative axis'. Meaning derives, therefore, from the position of a term within a system of other and similar terms (Saussure 2012: 115):

To resolve this issue, let us observe from the outset that even outside of language, all values are apparently governed by the same paradoxical principle. They are always composed:

- 1) Of a *dissimilar* thing that can be *exchanged* for the thing of which the value is to be determined; and
- 2) Of *similar* things that can be *compared* with the thing of which the value is to be determined.

Both factors are necessary for the existence of a value. To determine what a five-franc piece is worth one must therefore know: (1) that it can be exchanged for a fixed quantity of a different thing, e.g., bread; and (2) that it can be compared with a similar value of the same system, e.g., a one-franc piece or with coins of another system (a dollar, etc.). In the same way a word can be exchanged for something dissimilar, an idea; besides it can be compared with something of the same nature, another word.

Saussure, therefore, claims that a word can be compared “with something of the same nature”. But how is this to be, in fact, achieved? How can Saussure place an element on an ‘associative axis’ without invoking some pre-existing knowledge of the signifier? What tells him (apart from some assumed boundary to the ‘associative’ axis) that a word can be “compared with something of the same nature, another word”? How can he judge what ‘same nature’ is? Could a panda, for example, be in the same ‘associative axis’ as the Empire State Building? It soon becomes clear that Saussure lacks a criterion to define similarity.<sup>9</sup> And this can only be established if he already assumes that he knows the identity of the signifier and the ‘associative’ axis to which it must belong. This finding fundamentally undermines his model of meaning making; Saussure has unconditionally signed up to the ‘Myth of the Given’.

In the mid-twentieth century, Barthes follows Saussure in adopting the same dyadic structure for the sign and he also insists on its arbitrary nature. He states, for example, that “if I learn the highway code in an empirical (extra linguistic) manner, I perceive differences, not qualities: red, green, yellow have (for me) no reality other than their relation, the play of their oppositions . . . .” (Barthes 1990: 30). Equally, his ‘commutation test’ repeats Saussure’s mistake of assuming knowledge of the identity of the signifier and the paradigm to which it must belong. Barthes, for example, argues that this test identifies ‘commutative classes’ as follows: “suppose we have a structure given in its entirety. The commutation test consists of artificially varying one term of this structure

---

<sup>9</sup> This objection to Saussure is, in fact, a very old one. It is levelled at John Locke by George Berkeley. When Locke argued that it was possible for the mind to identify similarities in sense data when forming a universal, Berkeley pointed out that Locke would need some criterion to evaluate such a similarity (Bennett 1971: 24). This is precisely the problem that Saussure has here – he can only assert that similarity exists by already knowing a basis for it.

and observing whether this variation introduces change in reading or the usage of the given structure . . . ." (Barthes 1990: 19). But, as discussed above, this only works if Barthes imposes a limit on what might constitute the 'structure' and any potential 'variation' that might be introduced. Both Saussure and Barthes claim they have uncovered the underlying mechanisms of meaning making, but, in fact, they have simply identified how meaning changes within an established system of meaning. They both leave the deeper question of how meaning is formed *ab initio* entirely unexplored.<sup>10</sup>

Elsewhere, in his *'Mythologies'*, Barthes (2009) extends the notion of the sign with his concept of 'myth'. This introduces a further level of meaning creation, this time at a cultural level. He claims that the 'myth' involves the production of new identities within a culture. Interestingly, for our later discussion of Hegel and Peirce, Barthes describes these identities as 'essences', or 'forms', and he provides several examples (e.g., "Frenchness" and "militariness" (Barthes 2009: 139). However, because the original sign is still created arbitrarily, this means that, for Barthes, such identities remain detached from 'reality'; they are cultural constructions. In an example, Barthes discusses the 'basquity' of a house in Paris. This essence is based on the similarity of this building to houses in Spain. He views it, however, not as a phenomenon that really exists in the world, but as one that is created by culture. Interestingly, this leads him to conclude that the 'myth' of 'basquity' is a "deformation" of reality (Barthes 2009: 146). Barthes is, therefore, convinced there must be an intrinsic 'refraction' of reality in semiotics because the sign entails a cultural interpretation. This conclusion, of course, stems from 'secondary dualism' which construes interpretations (whether individual or cultural) as dualistically separate from perception.

The conviction that cultural interpretations distort reality also finds expression in the work of Umberto Eco. He expounds his position by arguing that signs always entail a refraction of reality. He views the human sciences, for example, as "interpretations of interpretations" (Eco 2018: 349) and observes that "semiotics is in principle the discipline studying everything which can be used in order

---

**10** The distinction that Saussure and Barthes make between a signifier and the associative axis to which it belongs also emerges in the semiotic urge to identify different *expressions* of a particular concept or conceptual *content*. These expressions are often construed as 'cultural codes' of that content. In some contexts, this idea is extrapolated to suggest that there are dominant, emergent and residual 'codes' in a culture. But this distinction between expressions and content is predicated on the assumption that a particular content can first be identified and that different expressions of it then manifest themselves. This is possible in the second dimension, in Figure 1, when a known value is being communicated, but it does not explain how a particular concept is formed.



to lie [...] I think that the definition of a ‘theory of the lie’ should be taken as a pretty comprehensive program of a general semiotics” (Eco 1976: 7). And Eco concurs with Barthes in suggesting that the social dimension is at the heart of semiotics; meaning is created by social convention. Eco, following Barthes, also adopts the terminology of semiotic ‘codes’ and claims that “a sign function is the correlation between an expression and a content based on a conventionally established code . . . .” (Eco 1976: 191). As Nöth points out, “it was Jakobson who, under the influence of information theory, adopted the dichotomy of *code* and *message* to replace the Saussurean *langue* and *parole*” (Nöth 1995: 210), but Eco’s adoption of semiotic codes simply reflects the core tenets of ‘secondary dualism’; codes enable the mind to bridge the divide between perception and meaning.

The argument that signs involve a distortion of reality finds one of its keenest exponents in the work of the Russian author, Vološinov. In his view, the social realm consists of signs, and these must be ideological because they involve ‘refractions’ of the reality (Vološinov 1973: 9):

Any ideological product is not only itself a part of a reality (natural or social), just as is any physical body, any instrument of production, or any other product for consumption, it also, in contradistinction to these other phenomena, reflects and refracts another reality outside itself. Everything ideological possesses *meaning*: it represents, depicts, or stands for something lying outside itself. In other words, it is a *sign*. *Without signs there is no ideology.*

Vološinov insists, therefore, that thoughts, themselves, are signs and, as such, they refract human understanding in an ideological manner. But Vološinov goes further; he also questions whether the mind itself should be construed as an independent agent of inspection. He argues that it is determined by its semiotic contents and that, as a result “if we deprive consciousness of semiotic, ideological content, it would have absolutely nothing left” (Vološinov 1973: 13). Vološinov, therefore, not only claims that interpretations are distortions of reality; he also claims that human consciousness is ideological as well.

The work of Vološinov has been influential in the field of social semiotics. This discipline differs from some other branches of semiotics by focussing specifically on how signs are *used* within a culture. It embraces the idea that signs are ideological, and it suggests, in line with this, that semioticians should identify how ‘semiotic resources’ are deployed by sign users to portray reality in a particular (and usually advantageous) manner. As a result, social semiotics, again, makes little attempt to explain how meaning is created *ab initio*. Instead, it assumes that meanings already exist within a culture, as sensory resources (visual, auditory etc), and its central concern is to understand how such meanings are employed by sign users.

It follows from this that social semiotics thus construes signs as being both motivated and conventional. Social semiotics agrees with Saussure that signs are conventional because signs are formed at a social level; they are endowed with meanings derived from their previous manifestations in a culture. But it also rejects the Saussurean assertion that signs are arbitrary because they are used in a way that is motivated by the needs of the sign user (Kress and Van Leeuwen 1996: 8). It is no surprise, in this context, that social semiotics echoes Barthes, Eco and Vološinov in their assertion that signs involve a ‘distortion’ of reality. Kress and Van Leeuwen claim, for example (1996: 154–155), that “from the point of view of social semiotics, truth is a construct of semiosis, and as such the truth of a particular social group arises from the values and beliefs of that group”. Signs, in social semiotics, are not only cultural artefacts; they are employed, implicitly or explicitly, for ideological purposes.

## 2.2 Biosemiotics and the *Umwelt*

The emergence of biosemiotics, in the late twentieth century, represents an important step away from the focus on human culture and language which characterises the earlier work of Saussure, Barthes and Eco. As such, biosemiotics takes the discipline in a direction that finds a potential ally in Peirce. Indeed, many influential biosemioticians claim Peirce as a major influence (Hoffmeyer: 1996; Wheeler: 2006; Rodríguez Higuera: 2019). Peirce’s insistence on the triadic structure of the sign, his relational understanding of the universe, and his belief that nature adopt ‘habits’ have been widely adopted by biosemioticians. As Rodríguez Higuera (2019: 423) rightly observes “on the whole, a large majority of biosemiotics is conducted within the Peircean framework”.

In this context, however, it is important to analyse how biosemiotics tends to construe cognition and, specifically, how it compares with our earlier critique of ‘secondary dualism’. As will be seen, biosemiotics makes significant strides away from ‘secondary dualism’, but it is still held back by some lingering attachments to this cognitive model. This claim is particularly relevant given that biosemiotics often makes a claim to a Peircean heritage. Two issues, as a result of this, need to be addressed: firstly, is biosemiotics justified in asserting that it is aligned to Peirce? And, secondly, can the revised vision of Peircean semiotics, as proposed in this essay, address some of the more contentious issues that exist in biosemiotics? The second question will be addressed in section 10.4 – after we have evaluated Hegel’s influence on Peirce. In particular, this later discussion will evaluate the biosemiotic notions of the *Umwelt* and the lower semiotic threshold.

To begin with, however, it is important to stress that there are some important convergences between Peirce and biosemiotic theory. For example, biosemiotics appears to offer a potential solution to the problem of dualism; it seems to close the cognitive gap implicit in meaning making. As Hoffmeyer (1996: 94) explains:

To modern science, dualism still holds good as a way of dividing the world into two kingdoms, those of mind and of matter, the cultural and the natural spheres [...]. And it is this boundary that biosemiotics seeks to cross in hopes of establishing a link between the two alienated sides of our existence – to give humanity its place in nature.

This view concurs with Peirce's rejection of dualism which he describes as a philosophy which "performs its analyses with an axe" (EP2: 2). But care should be taken to identify exactly which philosophical problem is being addressed here. Hoffmeyer, writing as a biologist, sees biosemiotics as a means of overcoming the gap between the mind and *external* reality. But, as noted earlier, this is the problem of 'primary dualism'. What needs to be asked is whether biosemiotics addresses the quite separate issue of 'secondary dualism'. Hoffmeyer's main target in *'Signs of Meaning in the Universe'* is the 'physicalist' perspective of modern biology (Barbieri 2016: 2), but does biosemiotics address the dualism implicit in the 'mirror model'?

At the centre of any such discussion is the biosemiotic concept of the *Umwelt*. This notion, initiated by Jakob von Uexküll, argues that the experiences of a particular species are determined by its sensory apparatus. As a result, different species may encounter the same physical environment, but they experience it in different ways. This qualitative difference is determined by a creature's underlying ability to grasp the species-specific signs that exist in the environment. And Nöth confirms this view, maintaining that the "*Umwelt*, in this sense, is the way in which the environment is represented to the organism's mind, and it comprises the scope of the organism's operational interaction with its environment" (Nöth 1998: 4). Elsewhere, Deely (2009: 42–43) argues that the *Umwelt* is also compatible with his own interpretation of pre-modern thinking:

It is a semiotic point of the first importance that things fully become signs (vehicles of signification) within the experience of animals, a whole to which the human being is but a part; and this experience whereby the action of signs transforms environment into an objective world or *Umwelt* not only presupposes awareness on the side of the animals as subjective entities, it also supposes a whole network or web of relationships linking animal and environment not merely in the order of *ens reale* [ . . . ], but both together as parts within a larger whole which is not simply "there", like rocks on the moon, but is there as *a world meaningful to the animal*, a surroundings structured objectively in terms of what is to be sought (+), what is to be avoided (-), and what seems safe to ignore (0) – a world of objects, in short, not wholly reducible to things existing apart from awareness.

In these accounts of the *Umwelt*, therefore, reality is “represented to the organism’s mind” in a particular fashion and this is wholly dependent on the “constitution of the organism doing the sensing” (Deely 2001: 127). And, as Cobley asserts, “put simply, an animal’s *Umwelt* is its ‘objective world’: it is the world that it lives in, how it apprehends everything around itself (and even within itself); yet, at the same time, that apprehension takes place on the very basis of the sensory apparatus that it possesses” (Cobley 2009: 8).

However, if this biosemiotic position is evaluated through the framework of ‘secondary dualism’, it becomes clear that a degree of dualism is still present in its overall approach. For it still adheres to a binary view of nature: a physical world and a species-specific interpretation of it. Romanini recognises this, and correctly observes that biosemiotics has been tempted to learn “Peirce’s doctrine of signs . . . through commentators that have hidden Peirce’s objective idealism under the carpet” (Romanini 2014: 227).

In the biosemiotic view, therefore, an *Umwelt* is constructed by each animal using the sensory elements offered to it by the physical world. The *Umwelt* of each species is then constructed *from*, or *upon*, these elements and a sense of dualism still seems to be preserved. To avoid this charge, biosemioticians often claim that what an organism experiences are, in fact, species-specific signs which are *pre-defined* as being interpretable (because an animal belongs to a particular species). The organism thus experiences its world phenomenologically *through* its own species-specific signs. The *Umwelt*, in this view, simultaneously fuses animal experience with semiotic interpretation. The organism only perceives meaningful signs; the two cannot be pulled apart. This forms the underlying basis of the biosemiotic claim to overcome dualism. But two important observations question the extent to which this biosemiotic solution is following in the Peircean tradition.

Firstly, this approach suggests that a phenomenological theory of ‘direct acquaintance’ is at work here, but it is now elevated to a semiotic level. The *Umwelt* is construed as a series of species-specific meanings that only a particular species has access to. As Kull (2010: 45) explains “the objects in an *Umwelt* have a bearing on the behaviour of the organism, because objects, as components of signs, are (by definition) meaningful”. Semiotic meaning is thus already embedded in the perceptual acts of an organism because such meaning has been reframed species-specifically. These biosemiotic parallels with phenomenology can also be found in its discussion of the mind-body distinction. Merleau-Ponty, in his *Phenomenology of Perception*, rejects this Cartesian division. Attacking this view, he suggests that mind is, in fact, “embodied” (Merleau Ponty 2012: 40). Within biosemiotic theory, there is a similar urge to merge the dualistically separated concepts of mind and body. Both Wheeler (2006: 18) and Hoffmeyer (1996: 88) suggest that we should think in terms of the “body-mind” and that this is the centre of human experience.

Brier, likewise, suggests that “the thing in itself is not only ‘outside’ in nature, but also inside ourselves, if I understand Peirce correctly” (Brier 2008: 334).

Secondly, and linked to this phenomenological stance, is the biosemiotic view that an organism ‘models’ its world. This position has overtones of a constructivist nature. Kull highlights this aspect of biosemiotics when he states that “organisms *make* the world. *Umwelt* does not mean just a recognition of objects in the world, nor is it confined to remembering (including all forms of memory) – it is just as much a manufacturing of the world” (Kull 2010: 46). Cobley agrees with this view, stating that “all species live in a ‘world’ that is constructed out of their own signs, the latter being the result of their own sign-making and receiving capacities” (Cobley 2010: 4). And Pablé (2020: 128) observes that “the objective world is constituted by how the animal maps the world through its *Innenwelt* (the inner, subjective world) through which the meanings of objects are determined (via signs)”. As a result, it is possible to detect a constructivist tenor in this biosemiotic approach even though it is separate, as a discipline, from social constructivism. This conclusion is confirmed when Brier advances the notion of “bioconstructivism” and suggests that every living system constructs “its own ‘life world’” (Brier 2008: 339).

The biosemiotic notions of ‘mapping’ and ‘modelling’, however, need to be treated extremely carefully. The central problem revolves, again, around the idea of dualism. The terms themselves can easily suggest that an organism *constructs* its own *separate* reality (its *Umwelt*). ‘Maps’ and ‘models’ are, after all, versions of something else. One of the key issues, therefore, is whether biosemiotic modelling involves a separate constructed entity that remains *relative* to the physical world. As Randviir states “in modelling everything is concerned with everything, and everything is relative” (Randviir 2019: 9). But if biosemiotic ‘mapping’ involves relativism, then it would seem to adhere to a view of cognition that is closely aligned with ‘secondary dualism’. As has been highlighted, this model involves the mind creating an interpretive understanding of the world that is both separate from reality and relative to its sense data.

Linked to this, there is also the allied question of how interactions between the constructed ‘model’ and the world might take place. In most construals of ‘modelling’ feedback loops do exist. Kull (2010: 46–47), for example, talks of “functional cycles” which help build an organism’s *Umwelt*. But it is important to specify exactly what is involved here. It has been noted, for example, that Deely separates the *Umwelt* of an organism into elements which are positive, negative, or neutral, but this does not mean that the organism’s ‘map’ is ‘connected’ with the world except through the mechanism of further ‘interpretation’.

What is required, if some form of interpretative constructivism is to be avoided, is a biosemiotic account of how an organism's meanings can be revised in a non-dualistic fashion.<sup>11</sup>

The phenomenological and constructivist aspects of biosemiotics are important in this essay because, as will be discussed in due course, Peirce rejects *both* philosophical tendencies. His own account of reality is non-dualistic in nature, and he views the semiotic 'construction' that is created within his own philosophy as a *joint* venture between the mind and reality. Indeed, Peirce gives an active role to reality itself in the formation of meaning (through his notion of secondness) and the outcome of such meaning making is a form of synthetic reality which is much more than a 'construction' of the mind. As such, Peirce might well reject the notion of 'mapping' as it is currently understood in modern biosemiotics. Overall, as a discipline, biosemiotics addresses the problems of 'primary dualism', but its phenomenological and constructivist tendencies would indicate that it has not fully escaped the grasp of 'secondary dualism'.

This lingering adherence to the elements of 'secondary dualism' also emerges in another and important way. As highlighted earlier, the 'mirror' model assumes that the mind creates meaning by *interpreting* its sense data. In the hands of Vološinov, or Barthes, these meanings are subjective distortions, or refractions, of reality. At first glance, this problem seems to be circumvented in biosemiotics because these 'interpretations' of reality have validity at a species-specific level. But it is evident that the notion of 'interpretation' has a fundamental role in biosemiotic theory and is employed by many biosemioticians to describe the action of signs (Hoffmeyer 1996: 95; Kull 2018: 359). Indeed, Hoffmeyer goes so far as to propose that *everything* from cell action to the behaviour of animals should be explained by this intellectual activity. In doing so, Hoffmeyer effectively expands the idea of 'interpretation' to include not just the mental activities of higher organisms, but also the action of cells themselves (Hoffmeyer 1996: 95):

---

<sup>11</sup> Copley also highlights the ways in which biosemioticians have sometimes divided the idea of 'modelling' into three distinct types (Copley 2016: 35). These are 'primary modelling' which is "the capacity for verbal and non-verbal communication", 'secondary modelling' which involves "verbal communication through vocal interactions" – which includes the use of signs. Lastly, there is 'tertiary modelling' which comprises the "inevitable mutation in social exchange of primary and secondary modelling to produce cultural forms. . . which not only partake of the lower strata of modelling but also feed back to them". These three levels of modelling can easily be construed as reflecting Peirce's three categories. Indeed, Copley observes that Sebeok and Danesi (2000) attempt to argue this case (Copley 2016: 36). But these models, even though they may loosely mirror the categories of Peirce, are a far cry from his three categories of 'Being' which revolve around indeterminacy, subsequent limitation, and the creation of 'thirds'.

Or, to use the metaphor that keeps cropping up in this book: Inside us there is ‘someone’. Life is based on the principle of ‘someone’ inside ‘someone’ inside ‘someone’ inside . . . What emerges, when the authority for interpreting and making decisions is delegated to organs, tissues, and cells, is a hierarchical network of sign processes the accumulated output of which constitutes the coordinated actions of the organism.

And it is on this basis that biosemiotic claim is made that the universe is a web of being in which everything is interpreted and re-interpreted. But, as noted earlier, the notion of interpretation itself is a feature of the secondary dualist model. Far from addressing the serious issues that this template raises, it would appear, therefore, that Hoffmeyer expands its framework to include all parts of the organism. Rather than rejecting what is, potentially, a flawed model of cognition, he reframes the entire natural world within its remit.

This leads to a critical question for this current essay: what is Peirce’s position on the notion of interpretation? The assertion that he offers modern semioticians an account of the sign based on interpretation has formed a cornerstone of Peircean exegesis both within, and outside, biosemiotics (e.g., Campbell, Olteanu, Kull 2019: 357). Indeed, it is often maintained that Peirce’s triadic structure of the sign differs from Saussure’s *precisely* because he advocates an interpretative system rather than one based on ‘codes’. Petrilli, for example, argues that contemporary semiotics has embraced “‘interpretation semiotics’ thanks in particular to the recovery of Charles S. Peirce” (Petrilli 2014: 2). Equally, Barbieri makes a similar claim regarding Peirce when he distinguishes two different approaches in biosemiotics (Barbieri 2009: 234):

This is the great difference between the above schools of biosemiotics. Sign biosemiotics is based on the Peircean approach and assumes that semiosis is about interpreting the world. Code biosemiotics is based on the code model and assumes that semiosis is primarily about bringing objects into existence and organizing them into functioning structures.

But one of the central claims of this essay is that Peirce would reject the idea that signs are formed through interpretation. Instead, it is proposed that Peircean semiotics should be re-evaluated on this critical point. Critically, it will be proposed that Peirce construes meaning making as a matter of *sublation*, rather than of interpretation, and this activity takes place when the interpretant is formed within the sign.

This is a proposition that many readers may find hard to accept. But it is one which becomes evident once the Hegelian context of Peircean semiotics is uncovered. There are, of course, many occasions when Peirce adopts the language of ‘interpretation’, but he tends to use the term in a way that is quite different from secondary dualists. For Peirce, interpretation does not entail the intellect looking



in its mental ‘mirror’ and giving meaning to a particular sense datum. Instead, for him, the mind is immersed in signs (CP5: 289) and the interpretant (e.g., the sign’s meaning) is the outcome of a specific form of sign activity (see section 6.6). This conclusion serves, as we shall see, to create considerable distance between biosemiotics and the Peircean legacy.

There is one other aspect of biosemiotics which should also be highlighted in relation to Peirce. This is the way in which biosemioticians sometimes adopt the notion of ‘codes’. Hoffmeyer, again, does this relatively frequently. He talks, for example, about “code duality” (Hoffmeyer 1996: 44). The notion of the semiotic code, however, finds no origins in the Peircean tradition. Instead, it has its roots, as highlighted above, in secondary dualist thinking. The semiotic code is how the ‘gap’ between human perceptions and meanings can be crossed; it facilitates the transition from the signifier to the signified. The idea of codes has much appeal to biologists such as Barbieri (2008) and Pattee (2007, 2015) because it resonates with their discipline’s notion of genetic codes, but it is also clear that the idea of ‘codes’ originates in ‘secondary dualism’ and its requirement to move from the images in the ‘mirror’ of the mind to the meaning that is subsequently given to them.

Authors such as Barbieri, however, suggest that biosemiotics should move towards an even greater focus on codes. He sees this as a way of shifting attention away from what he (mistakenly) construes as the more ‘interpretative’ (and Peircean) leanings of biosemiotics. In his view, codes work at a fundamentally organic level. He argues that (Barbieri 2008: 587):

Any organic code is a set of rules that establish a correspondence between two independent worlds, and this necessarily requires molecular structures that act like adaptors, i.e., that perform two independent recognition processes. The adaptors are required because the two worlds would no longer be independent if there were a necessary link between them, and a set of rules is required in order to guarantee the specificity of the correspondence.

This quotation amounts, however, to an exemplary explanation of how codes work within the secondary dualist model; they allow a passage from one ‘independent world’ to another. Barbieri thus attacks what he sees as a “Peirce industry” (Barbieri 2015: 168), but his advocacy of codes both reinforces the influence of ‘secondary dualism’ within biosemiotics and mistakenly assumes that Peirce’s semiotics is interpretative in nature.

In summary, biosemiotics makes significant steps away from the Saussurean model and it establishes new ways of thinking outside the boundaries of linguistics and culture. But it largely achieves this by expanding the notion of ‘interpretation’ into the biological field and this serves to reinforce, rather than address, the problems of ‘secondary dualism’. Moreover, biosemiotic theory also displays other features which suggest both a constructivist and phenomenological approach. As a



result, it can be argued that modern biosemiotics is positioned at some distance from the intellectual heritage of Peirce. This claim will be substantiated in the course of the following chapters as the Hegelian influence on Peirce is uncovered.

Having said this, however, the account of Peircean semiotics that will emerge in the following sections will also demonstrate that biosemiotics, as a discipline, has much to gain from a more Hegelian construal of Peirce. These opportunities for the further development of biosemiotics will be discussed, in section 10.4, when our analysis revisits the notion of the *Umwelt* and explores the idea of the ‘lower semiotic threshold’.

### 3 Hegel, Peirce, and Vygotsky: Models of perception

So far, it has been noted that one of the foundations of ‘secondary dualism’ is the questionable belief that the mind knows the identity of its sense data. It has been suggested that if perceptions are mere hypotheses, rather than forms of knowledge, then the model collapses. All that remains is the frank acknowledgment that perceptions are, in the words of Hegel and Peirce, ‘indeterminate’. This may seem, at first sight, to constitute an epistemological failure, but, in fact, it marks the starting point of the perceptual model that Hegel, Peirce and Vygotsky espouse. It involves a rejection of what Hegel (1977: 58–66) calls ‘sense certainty’ and it is with this notion that our analysis should begin.

#### 3.1 Hegel on perception

Central to Hegel’s discussion of perception is his rejection of Kantian ‘intuitionism’ – the belief that the mind can grasp the immediate content of its perceptions. This view has already been encountered, in modern form, in the *Myth of the Given*. Over a century earlier, however, Hegel (1977: 58) asserts that “sense-certainty appears to be the *truest* knowledge; for it has not as yet omitted anything from the object, but it has the object before it in its perfect entirety. But, in the event, this very *certainty* proves itself to be the most abstract and poorest *truth*”.

Rejecting ‘sense certainty’ Hegel argues that perceptions do not constitute immediate *knowledge*. He asserts this in his account of ‘indeterminate Being’ when he argues that “Pure Being makes the beginning: because it is on the one hand pure thought, and on the other immediacy itself, simple and indeterminate; and the first beginning cannot be mediated by anything or be further determined” (Hegel 2014: 101). Hegel thus conceives the mind’s experience of Being as both “immediate” (i.e., not behind Locke’s “veil of perception”) and yet still “indeterminate”. He, therefore, rejects the views of philosophers such as Locke and Hume, who insist that the mind possesses immediate knowledge of its sense impressions. Hegel argues that “in Empiricism lies the great principle that whatever is true must be in the actual world and present to sensation” (Hegel 2014: 49) but he suggests that empiricism “asserts that immediate knowledge is a fact. It has been shown to be untrue in fact to say that there is immediate knowledge, a knowledge without mediation either by means of something else or in itself” (Hegel 2014: 87).

In this second passage, Hegel hints at his further claim that the human mind can only come to know the identity of its sense data through mediation. How such mediated knowledge might be created will be discussed shortly, but a key characteristic of Hegel's position is that it comprises *both* the perceptual and the intellectual. This form of 'mediated' knowledge is sometimes construed by Hegel in terms of "thought-forms" or "thought-types" (Hegel 2014: 27–28):

And in order to prevent misconception, thought-form or thought-type should be substituted for the ambiguous term thought. From what has been said the principles of logic are to be sought in a system of thought-types or fundamental categories, in which the opposition between subjective and objective, in its usual sense, vanishes.

These Hegelian 'thought-forms' are quite unlike the 'interpretations' of sense data encountered in 'secondary dualism'. In contrast, they are 'amalgams' of the mental and the empirical. This Hegelian theme is later adopted by both Peirce, and Vygotsky, and it also finds echoes in the contemporary work of John McDowell. The latter argues, in his *Mind and World*, that "we must insist that the understanding is already inextricably implicated in the deliverances of sensibility themselves. Experiences are impressions made by the world on our senses, products of receptivity; but those impressions themselves already have conceptual content" (McDowell 1994: 46). This neo-Hegelian way of thinking about concepts undermines the framework of 'secondary dualism' which insists upon the separation of the conceptual and the perceptual. Indeed, McDowell highlights the "unboundedness of the conceptual" (McDowell 1994: 24–45).<sup>12</sup>

---

**12** Brandom also seeks to revise the location of the barrier between the sensible and the conceptual. He adopts an approach which he calls 'inferentialism' and he claims that any concept necessarily involves inferences about the world. This means that a concept entails "the giving and asking of reasons" (Brandom 2000: 10–11):

The master idea that animates and orients this enterprise is that what distinguishes specifically *discursive* practices from the doings of non-concept-using creatures is their *inferential* articulation. To talk about concepts is to talk about roles in reasoning. . . [The master idea] is a *rationalist* pragmatism, in giving pride of place to practices of giving and asking for reasons, understanding them as conferring conceptual content on performances, expressions, and states suitably caught up in those practices.

This brings Brandom closer to Peirce, but Brandom departs from him by arguing that this "giving and asking of reasons" is social in nature (Brandom 2000: 163):

The thesis to be elaborated here is that the representational dimension of discourse reflects the fact that conceptual content is not only *inferentially* articulated but also *socially* articulated. The game of giving and asking for reasons is an essentially *social* practice.

One of the effects of Hegel's position, combining the perceptual and the conceptual, is that it now becomes possible to talk of the mind's ability to *experience* its own concepts. They are no longer just secondary auxiliaries to received sense data. Indeed, Hegel's treatment of perception means that concepts, once formed, can be used to inform subsequent experience; the mind thus encounters the world *through* its concepts. This same approach will also be found in Peirce and Vygotsky; Peirce, for example, argues that the human intellect creates 'thirds' through its signs and that, once formed, these signs can be *perceived* in the world. Equally, Vygotsky suggests that the mind experiences reality through its 'verbalised perceptions'. In this, they are both following Hegel who argues that "Man, therefore, is always thinking, even in his perceptions" (Hegel 2014: 29).

### 3.2 Peirce on perception

In line with Hegel, Peirce begins his analysis of concept formation with a critique of human perception. It is of some note that Peirce's analysis of perception is a subject that seldom concerns semioticians. Armed with an assumption that they already know the identity of the 'sign vehicle', they tend to marginalise this aspect of his work and so gloss over the very foundations of his sign theory. Almeder, notes, for example, that a feature of contemporary Peircean exegesis is the lack of an adequate discussion of his views on perception (Almeder 1980: 137).

In analysing Peirce's views on perception, it is important to begin with Peirce's rejection of nominalism. Peirce is a fervent critic of this philosophical tradition (Forster 2011) and, like John Deely a century after him, he seeks to develop his philosophy by effectively "rooting out nominalism" (Cobley 2009: 6). The nominalist stance, Peirce argues, largely determines the framework through which modernity views the world, "but it is not modern philosophers only who are nominalists. The nominalist *Weltanschauung* has become incorporated into what I will venture to call the very flesh and blood of the average modern mind" (EP2: 157).

As noted earlier, nominalism is closely related to 'secondary dualism'; it adopts a similar stance on meaning construction and it embraces the atomisation of sense data. Consequently, as soon as an identity is given to a particular sense datum, it is isolated from its companions. Peirce rejects both this philosophical position and its consequences. At one point (EP1: 104) he states that "if the nominalistic character of these doctrines themselves cannot be detected, it will at

---

Brandom, therefore, borrows the Hegelian view of what it is to *be* a concept, but he tends to frame it within a social context.

least be admitted that they are observed to carry along with them those daughters of nominalism, – sensationalism, phenomenalism, individualism, and materialism”. In the context of this essay, these “daughters of nominalism” require evaluation. Such an analysis will illustrate the full extent to which Peirce concurs with our earlier critique of ‘secondary dualism’.

When Peirce mentions “individualism” he is referring to the atomisation of sense data. Peirce rejects this notion and, instead, argues that the human mind can only experience the world as a continuum which he terms the “Phaneron” (EP2: 362). The intellect encounters the world as a continuous flow of experience. Peirce argues, as a result, that acts of perception involve the selection of phenomena from this continuum and that such sense data come embedded with inferential links to other perceptions. This means that the mind never perceives an individuated sense datum which is isolated from others. Peirce states, for example, that “continuity is given in perception” (EP2: 238), and he maintains that philosophers should think in terms of “synechism, or the doctrine that all that exists is continuous” (CP1: 172). Importantly, it also follows from this that the human mind is part of this continuity itself. It cannot stand back and view reality from the ‘outside’ as if it were a ‘spectator’. Indeed, Peirce insists the intellect is immersed in experience and that “we ought to say that we are in signs and not that signs are in us” (CP5: 289).

As discussed, the atomisation of human sense data also entails the fact that perceptions are exhausted by their individual qualities. The mind can experience a red sense datum, or a blue sense datum, but it cannot observe a sense datum which is simultaneously red and blue. Peirce also rejects this conclusion as another consequence of ‘individualism’. Instead, he argues that a particular sense datum can include *multiple* qualities which can be subsequently separated by the mind. Crucially, this allows him to maintain that the human intellect *perceives* connections in the world because its sense data are experienced as perceptual bundles.

Secondly, Peirce highlights “sensationalism” – his equivalent of the ‘*Myth of the Given*’. Concurring with Hegel and Sellars, Peirce argues that the mind cannot possess certain perceptual knowledge and so he rejects the ‘intuitionism’ of Kant (EP1: 12–27; CP5: 213). Indeed, Peirce maintains that the mind only experiences perceptual ‘vagues’ which are always open to further determination. However, such analysis should avoid the conclusion that Peirce also rejects the idea that the mind directly experiences its sense data. Peirce, in fact, insists that the mind does possess such immediate experience. So, Peirce, following Hegel, espouses a very distinct philosophical position; he claims that the intellect does not know the precise identity of its sense data, but, at the same time, it has direct access to them.

This leaves two further “daughters of nominalism” – “materialism” and “phenomenalism”. These terms are both aligned to Peirce’s rejection of dualism. Peirce states, as noted earlier, that “the old dualistic notion of mind and matter, so prominent in Cartesianism, as two radically different kinds of substance, will hardly find defenders today. Rejecting this, we are driven to some kind of hylopathy, otherwise called monism” (EP1: 292). The notion of ‘matter’, as one of the two poles of dualism, is entailed in his rejection of “materialism”. Surprisingly, however, Peirce *also* rejects ‘phenomenalism’ at the other pole. This is important because modern accounts of perception often assume that a rejection of ‘materialism’ must involve a form of ‘phenomenalism’. But Peirce seeks to establish a middle ground where neither materialism nor phenomenalism hold their sway. And it is a position which opens the possibility of synthetic human knowledge. It is what Peirce refers to when he cites the notion of “monism”.

At this point, it is important to discuss Hegel’s own phenomenology. This is quite different from the phenomenological theories often found in the twentieth century. The latter often involve notions of individual, or social, *constructions* of the world which float free from reality. Hegel, however, is aware of this alternative form of phenomenology and, over a century before social constructivism emerges on the philosophical scene, he warns (Hegel 2014: 239) of the dangers that it entails:

The abuses which these methods with their formalism once led to in philosophy and science have in modern times been followed by the abuses of what is called ‘Construction’. . . . The name ‘Construction of notions’ has since been given to a sketch or statement of sensible attributes which were picked up from perception, quite guiltless of any influence of the notion, and to the additional formalism of classifying scientific and philosophical objects in a tabular form on some presupposed rubric, but in other respects at the fancy and discretion of the observer.

Having identified the key aspects of nominalism which Peirce rejects, it is now important to consider his own position on perception. At the very foundation of his own account is the notion of the ‘percept’. This perceptual entity is quite different from the atomised ‘sensation’ of the nominalist model. Peirce describes the percept as follows (CP7: 619):

Let us say that, as I sit here writing, I see on the other side of my table, a yellow chair with a green cushion. That will be what psychologists term a ‘percept’ (*res percepta*). They also frequently call it an ‘image’. With this term I shall pick no quarrel. Only one must be on one’s guard against a false impression that it might insinuate. Namely, an ‘image’ usually means something intended to represent, – virtually professing to represent – something else, real or ideal. So understood, the word ‘image’ would be a misnomer for a percept. The chair I appear to see makes no professions of any kind, essentially embodies no intentions of any kind, does not stand for anything. It obtrudes itself upon

my gaze; but not as a deputy for anything else, not ‘as’ anything. It simply knocks at the portal of my soul and stands there in the doorway.

Several points emerge in this passage. Firstly, Peirce insists that the percept does not “stand for” anything. It is not a representation of something that might, or might not, exist ‘behind’ it. Secondly, the percept, as a whole, acts *upon* the perceiver. Peirce argues that it “obtrudes itself upon my gaze”. This reverses the position of ‘secondary dualism’ which views the perceiver as an active agency which inspects its atomised perceptions. And thirdly, for Peirce, percepts are always perceived as *connected* to one another (CP7: 624):

The psychologists very reasonably argue that the first impressions made upon sense must have been feelings of sense qualities – say colours, sounds, etc – disconnected from one another, and not appearing to stand over against a self as objects . . . . But this is quite inferential. We are, of course, directly aware of positive sense-qualities in the percept (although in the percept itself they are in no wise separate from the whole object); but as for their being at first disconnected and not objectified; that is psychological theory.

And it follows from this position that percepts are not exhausted by one quality. When I see a chair, for example, my mind also perceives the different elements of it *connected* to each other. Leaving aside Peirce’s reference below to ‘firstness’, he states that (CP7: 625):

In the percept, these elements of Firstness are perceived to be connected in definite ways. A visual percept of a chair has a definite shape. If it is yellow, with a green cushion, that is quite different from being green with a yellow cushion. These connectives are directly perceived, and the perception of each of them is a perception at once of two opposed objects, – a double awareness. In respect to each of these connections, one part of the percept appears as it does relatively to a second part.

The chair is thus experienced in its entirety and we are aware of the relationships between its perceptual elements. This position is not open to the nominalist who can only link atomised perceptions through interpretation.

The ‘percept’ is, however, only one part of Peirce’s theory of perception. He goes on to argue that percepts are transformed by the human mind in ‘perceptual judgments’. The latter allows the intellect to make a transition from a ‘dumb’ percept to the beginnings of human knowledge. The ‘perceptual judgement’ is, therefore, critical to Peirce because it allows him, following Hegel, to combine both the perceptual and the conceptual. Peirce states that “the moment we fix our minds upon it and think the least thing about the percept, it is the perceptual judgment that tells us what we so ‘perceive’” (CP7: 643). Rosenthal (2004: 194) emphasises this important point:

The percept is that sensory element which is presented in perceptual awareness . . . . . Peirce is not here asserting that we first perceive the percept and then proceed to interpret it in a judgment. Nor is he asserting that the percept and the content of the perceptual judgment are physically, metaphysically, or numerically distinct. He does not hold that what we are aware of is sense data of some sort rather than a physical object. Rather, the percept as interpreted is what we immediately perceive and is the reality.

The ‘perceptual judgment’, therefore, spontaneously tells the perceiver *what sort of thing* the percept is. In doing so, the ‘perceptual judgement’ changes the epistemological status of the perception; it becomes a ‘judgment’ (EP2: 155):

By a perceptual judgment, I mean a judgment asserting in propositional form what a character of a percept directly present to the mind is. The percept of course is not itself a judgment, nor can a judgment in any degree resemble a percept. It is as unlike it as the printed letters in a book where a Madonna of Murillo is described are unlike the picture itself.

This means that, for Peirce, the human intellect experiences reality through its ‘perceptual judgments’. It does not experience individual things as such. Instead, the mind perceives elements of reality, potentially, *as members of a class*. And, as a result, ‘perceptual judgments’ subsume particulars under possible universals. Gallie (1952: 67) confirms this, stating that Peirce “rejects the claim that we have direct intuitive knowledge of such elementary data on the ground that whenever we know something, we know it *as* something – as being of such and such a character, or as standing in such and such relations. In otherwords, to know something, we must classify it, or relate it”. Peirce’s account, therefore, introduces a form of classificatory knowledge into human perceptual acts. A ‘perceptual judgment’ classifies a percept and says what sort of thing it *might* be. Critically, for Peirce, this process is beyond the control of the perceiver. It is not the same as the interpreting mind standing back and inspecting its sense data. In contrast, Peirce insists that the perceptual judgment “compels assent” (CP7: 627).

Importantly, ‘perceptual judgments’ classify percepts through spontaneous acts of comparison. Peirce states that (CP7: 632):

But the perceptual judgment ‘This chair appears yellow’ has vaguely in mind a whole lot of yellow things, of which some have been seen, and no end of others may be or might be seen; and what it means to say is, ‘Take any yellow thing you like, and you will find, on comparing it with this chair, that they agree pretty well in colour’.

This means that the ‘perceptual judgment’, as an initial form of knowledge, forms a tentative proposition (Stjernfelt 2014: 5). It makes the *hypothetical* assertion that percept ‘y’ may be a member of class ‘x’. Peirce readily accepts that such perceptual judgments may be indeterminate, or even incorrect, but this does not change the underlying structure of the perceptual judgment itself. As



Forster argues, on Peirce's definition, "a perceptual judgment qualifies as a judgment because it involves assent to a proposition" (Forster 2011: 121). Concurring with Hegel and McDowell, Peirce thus asserts that the conceptual is intrinsically involved in the perceptual.

Peirce's insistence that 'perceptual judgments' may be mistaken underpins another of his doctrines. The idea of 'fallibilism' argues that a perceptual judgment classifies a percept in such a way that is always open to revision (Short 2007: 317–323). For example, if I see a blue stain out of the corner of my eye, then this is what I have classified it as at that moment. If I realise, however, that it is, in fact, some blue paper, then this second 'perceptual judgment' does not falsify the original one; it simply replaces it. Peirce, therefore, describes fallibilism in these terms: "For fallibilism is the doctrine that our knowledge is never absolute but always swims, as it were, in a continuum of uncertainty and of indeterminacy" (CP1: 171).

This indeterminacy reinforces the view that the mind can only experience perceptual 'vagues'. Thus, when I see what I think is a 'blue stain', what I observe is a member of a putative class; it is *the sort of thing* that looks like a 'blue stain' to me. Peirce is adamant that I do not know that this percept is of a *specific* blue stain (i.e., a singular fact about reality). All that I know is that the stain looks like it belongs to the class of things that look like blue stains. This explains why Peirce invokes the terminology of 'vagues' – they are never absolutely true, or false; they simply have the potential, as a class, to be further determined.

It is important, also, to emphasise that Peirce's perceptual 'vagues' are forms of hypothesis.<sup>13</sup> Gallie (1952: 68–69) maintains that:

This brings us to Peirce's own, at first sight, paradoxical suggestion that every piece of apparently direct intuitive knowledge – including our knowledge of the most elementary 'data of consciousness' – is in fact of the nature of a hypothesis; since every claim to knowledge involves the *assumption* that a certain method of classification or systematization will in fact apply to a particular object or set of objects in a particular way.

This philosophical position has considerable implications for Peirce's semiotics. It means that the intellect cannot know the identity of a 'sign vehicle'. Indeed, in Peircean semiotics, a perception simply forms the vague starting point of a sign (e.g., a representamen). As such, it becomes clear that the central thrust of

---

<sup>13</sup> This aspect of the 'perceptual judgment' leads to Peirce's arguments for abduction – discussed in section 13.3.

Peirce's semiotics is to show how the mind moves from its perceptual 'vagues' to more determinate concepts through the action of signs.<sup>14</sup>

There are several implications of this analysis for Peirce's treatment of universals. Because the 'perceptual judgment' creates a member of a potential class it also implicitly forms a putative universal (or 'general' as Peirce calls it). He argues, for example, that "it follows that since no cognition of ours is absolutely determinate, generals must have a real existence. Now this scholastic realism is usually set down as a belief in metaphysical fictions" (CP5: 312). Such an account of the universal is, of course, contrary to 'secondary dualism' which asserts that the mind perceives atomised particulars and creates universals from them. In contrast to this, Peirce argues that the intellect directly experiences universals (albeit as perceptual vagues) in its 'perceptual judgments'. This has the effect of radically changing the way the human intellect relates to its perceptions. The secondary dualist contends that knowledge moves from particulars to universals. Peirce, on the other hand, argues that the mind *perceives* things as members of classes and that the mind subsequently determines further specifications of them. Peirce notes above that his position is often mistakenly viewed as a form of metaphysics. But Boler explains Peirce's position and insists that "in its strictly logical sense, the universal is a creation of the mind and cannot exist apart from the mind. But it is not necessarily a fiction, for it can be based on a real commonness which is the nature in itself" (Boler 1963: 52).

This is not to claim, of course, that Peirce completely rejects the notion of individuality. Early in his career he did seem to adopt this more radical position (CP3: 93). However, in later years, Peirce accepts that the mind experiences individuality through "haecceity" (Murfhey 1993: 131). But this position does not detract from Peirce's consistent rejection of the view that perception begins with atomised sense data.

---

<sup>14</sup> There are interesting parallels between Merleau-Ponty and Peirce's account of perception. The former also refutes the 'sideways' account of cognition implicit in 'secondary dualism' and maintains that reality is experienced through indeterminate sense impressions (Merleau-Ponty 2012: 5):

We are caught up in the world and we do not succeed in detaching ourselves from it in order to shift to the consciousness of the world. If we were to do so, we would see that the quality is never directly experienced, and that all consciousness is consciousness of something. This 'something', moreover, is not necessarily an identifiable object. There are two ways of being mistaken regarding quality: the first is to turn it into an element of consciousness when it is in fact an object for consciousness, to treat it as a mute impression when it in fact always has a sense; the second is to believe that this sense and this object, at the level of quality, are full and determinate.

As an overall philosophical stance, however, this still leaves Peirce with the requirement to find a way for the human mind to “fix belief” within the perceptual continuum of his ‘synechism’ (EP1: 109–123). In the case of Hegel, this perceptual indeterminacy is tackled through the logical workings of dialecticism. For Peirce, however, this cognitive task is achieved through the combinatory actions of signs. This is the central purpose of his semiotics and will be discussed in due course.

### 3.3 Vygotsky on perception

Vygotsky also maintains, like Peirce, that the mind’s initial experiences of the world are ‘indeterminate’. This is, again, evidence of Vygotsky’s Hegelian influence. He describes a child’s sense data, for example, as “a wild dance of uncoordinated sensations” (Vygotsky 1987: 291). And when describing a scenario in which a child is confronted with an intellectual puzzle, Vygotsky, and Luria (1994: 117) talk of the confused nature of the child’s responses: “The small child, placed in a situation where the direct attainment of his purpose seems impossible, displays a very complex activity which can only be described as a jumbled mixture of direct attempts to obtain the desired end . . . .”

Overall, however, Vygotsky places much less emphasis on the indeterminacy of perception than do either Hegel or Peirce. This is largely because he is writing as a psychologist rather than a philosopher. But, at the same time, it is also evident that he adopts the same starting point for concept formation, including the idea that the mind experiences reality as a continuum. Vygotsky claims, for example, that a “child’s thought emerges first in a fused, unpartitioned whole” (Vygotsky 1987: 251) and elsewhere he states (Vygotsky 1987: 298) that “structural psychology has shown that the small child does not perceive separate objects. Daily observation supports this perspective. Whether the situation is that of play or feeding, the child perceives the whole situation”. And Vygotsky and Luria (1994: 127) also confirm the same point when they suggest that “in processes of so-called ‘immediate perception’ and the transmission of perceived forms uninfluenced by speech, the child grasps and fixes an impression of the whole (spots of colour, the basic features of form, etc)”.

Confronted with the perceptual continuum, Peirce believes the mind creates its initial classifications through ‘perceptual judgments’. Vygotsky does not adopt this solution, but he still maintains that perceptual categorisation takes place. With Luria, he states that (Vygotsky and Luria 1994: 127):

Yet no matter how correctly and skilfully the child does it, at the very first stages of speech its perception ceases to be bound by the immediate impression of the whole; in its field of vision there arise new centres, fixed by words, and ties appear between these centres and different parts of the situation being perceived; perception ceases to be a 'slave' of the field of vision and, independently of the degree of correctness and perfection of solution, the child transmits impressions transformed by words.

Vygotsky and Luria thus assert that the intellect creates "centres" of perception and that this involves an element of "fixing". But what is different, in their account, is that this activity takes place using words. Linask observes that, for Vygotsky, "perception is no longer only an observation of some shape or colour – it is not isolated, but categorized. In a way, humans perceive with the aid of speech" (Linask 2019: 280). And this position is also reflected in Vygotsky's treatment of attention in a child. It is the use of words that allows a child to focus on specific aspects of the 'visual field' (Vygotsky and Luria 1994: 125):

From the first steps of the child's development, the word intrudes into the child's perception, singling out separate elements overcoming the natural structure of the sensory field and, as it were, forming new (artificially introduced and mobile) structural centres. Speech does not merely accompany the child's perception, from the very first it begins to take an active part in it: the child begins to perceive the world not only through its eyes, but also through its speech, and it is in this process that we find an essential point in the development of the child's perception.

Vygotsky thus envisages an ascent from what he calls "natural perceptions" to the "higher forms of perception" which are specifically human. For him, words are central to this process as they help a child to single out perceptions and so create "verbalised perceptions". In other words, the child begins to see the world *through* these higher-level perceptions as informed by words. Vygotsky states that "what was usually regarded as a property of the child's natural perception, proved to be really a peculiarity of its *speech*, or, in other words, a peculiarity of its *verbalised perception*" (Vygotsky and Luria 1994: 125). However, these new forms of perception do not entirely replace 'natural perceptions'. Instead, they establish a new level of perceptual experience above them and, as such, 'verbalised perceptions' enable the child to restructure its world. Vygotsky thus argues that "at the moment when, thanks to the planning assistance of speech, a view of the future is included as an active agent, the child's whole operational psychological field changes radically and its behaviour is fundamentally reconstructed. The child's perception begins to develop according to new laws that differ from those of the natural optic field" (Vygotsky and Luria 1994: 122).

Vygotsky's notion of 'verbalised perceptions' exhibits clear parallels with way in which Hegel, and Peirce, fuse the perceptual and the conceptual. The

human mind sees the world, as Vygotsky puts it, with ‘sense and meaning’ in a passage which Peirce himself could have written (Vygotsky 1978: 33):

A special feature of human perception – which arises at a very young age – is the *perception of real objects*. This is something for which there is no analogy in animal perception. By this term I mean that I do not see the world simply in colour and shape but also as a world with sense and meaning. I do not merely see something round and black with two hands; I see a clock and I can distinguish one hand from the other. . . . These observations suggest that all human perception consists of *categorised* rather than isolated perceptions.

And echoing our earlier critique of ‘secondary dualism’, Vygotsky insists that the mind cannot separate its perceptions from its concepts; perceptions (if they are not simply ‘natural’) must inherently contain conceptual meaning (Vygotsky 1987: 295–296):

Another [issue] is the meaningful nature of our perception. It has been shown experimentally that we cannot create conditions that will functionally separate our perception from meaningful interpretation of the perceived object . . . The understanding of the thing, the name of the object, is given together with its perception . . . . I see the object. I immediately perceive the object as such, with all of its meaning and sense. I see a lamp, a table, a person, or a door. In Buhler’s words my perception is an inseparable part of my concrete thinking.

Vygotsky’s contention that perceptions are picked out from an experiential continuum also has consequences for his views on the contemporary psychology of his time. Vygotsky’s rejection of ‘atomism’ leads him to attack what he calls the mindset of ‘associationism’ dominant in the psychology of the early twentieth century. This assumes that human knowledge is created by establishing ‘links’ between sense data. Vygotsky (1987: 291) critiques this thinking in the following terms: “[In the Associationist view] the child’s mental development consists of the constant accumulation of this material, resulting in new, more extended, and richer associative connections among separate objects. The child’s perception is constructed and grows with this development of associative connections”. In contrast to this approach, Vygotsky sees mental development as a *qualitative* development which involves the constant formation of new concepts, new identities, and new structures. Concepts are not formed, as a result, by creating links or associations in the mind (Vygotsky 1994: 259):

A concept is not just an enriched and internally joined associative group. It represents a qualitatively new phenomenon which cannot be reduced to more elementary processes which are characteristic of the early stages of development in the intellect. Concept thinking is a new form of intellectual activity, a new mode of conduct, a new intellectual mechanism.

As an aside, this rejection of ‘associationism’ is also evident in Hegel. He states, rather acerbically, and referring to British empiricism, that “the so-called *laws*

of the association of ideas were objects of great interest, especially during the outburst of empirical psychology which was contemporaneous with the decline of philosophy” (Hegel [1830] 1894: 455).

For Vygotsky, however, it is the mind’s ability to create new concepts which liberates the human mind from the mechanistic thought of animals. By creating concepts, and developing ‘higher psychological processes’, the intellect frees itself from the rigid constraints of ‘natural perception’ (Vygotsky 1978: 35):

However, the difference between the practical intelligence of children and animals is that children are capable of reconstructing their perception and thus freeing themselves from the given structure of the field. With the help of the indicative function of words, the child begins to master attention, creating new structural centers in the perceived situation.

These processes ensure that humans are not slaves to their vision (Vygotsky 1987: 127) and, as a result, they are able to develop choice in the world. Moreover, Vygotsky’s rejection of ‘associationism’ also means that the workings of the human mind cannot be understood by psychology itself in simplistic models of ‘stimulus and response’ (Vygotsky 1978: 58):

Despite great diversity in procedural details, virtually all psychological experiments rely on what we shall term a stimulus-response *framework*. By this we mean that no matter what psychological process is under discussion, the psychologist seeks to confront the subject with some kind of stimulus situation designed to influence him in a particular way, and then the psychologist examines and analyses the response(s) elicited by that stimulating situation.

Because human perception, however, works at a higher level, Vygotsky argues that such stimulus and response approaches are bound to fail. He contends that “when we examine the experimental procedures used in complex reactions, we find that all are restricted to meaningless connections between stimuli and responses” (Vygotsky 1978: 69). And Vygotsky suggests that the psychology of his time has also fallen into other dualistic traps. One of the most important of these is the assumption that the mind and body exist in separate realms. When discussing the differences between the historical and the biological development in a child, Vygotsky (1994: 197) argues that:

So, a great chasm continues to gape between these two concepts. The historical and the biological aspect of the child’s development end up separated from one another and it is impossible to build a bridge of any sort between them, which might help us unite facts and data pertaining to the dynamics of form in the thinking process with the facts or data about the dynamics of the content which fills this form.

Elsewhere, Vygotsky also insists that other dualisms impede the progress of psychology. He argues that speech is often treated, quite incorrectly, as an

external manifestation of internal thought. As such, it is viewed as an accompaniment of thought, rather than something that actively informs it. This results in yet another dualism being created – that between sound and meaning. If speech is treated merely as the outward expression of inner thoughts, then the sounds contained within it are separated from their meanings and they simply correspond, once more, by association. Vygotsky attacks this dualistic assumption when he states that “in accordance with dominant trend, psychology has until recently depicted the matter in an oversimplified way. It was assumed that the means of communication was a sign (the word or sound); that through simultaneous occurrence a sound could become associated with the content of any experience and then serve to convey the same content to other human beings” (Vygotsky 2012: 7–8). This approach is seriously undermined by Vygotsky’s insistence on the verbal origins of human concepts.

Overall, therefore, despite some important variations in approach, it is evident that parallels exist between Peirce and Vygotsky in their accounts of perception, and, furthermore, that these similarities derive from their shared Hegelian heritage. All three thinkers reject the core tenets of ‘secondary dualism’ and the philosophical difficulties that stem from it. Moreover, all three acknowledge the indeterminacy of human perception and believe that their main philosophical task is to explain how the mind moves from this indeterminacy to form its higher concepts. They agree that this must involve some way of ‘fixing’ this perceptual indeterminacy. It has already been highlighted above that Vygotsky believes that words have a critical role in this activity. But it is also important to assess how Hegel tackled this philosophical problem and how he originally accounted for concept formation. Hegel’s own solution involves the invocation of a mediating entity (an ‘Essence’) created by the mind itself. This idea is subsequently developed by Peirce (and by Vygotsky) in their respective explanations of how the human mind creates stable and effective concepts. We will now turn to a discussion of the role of mediation in Hegel, Peirce, and Vygotsky.





---

## Part Two: **Concept formation as mediation**



## 4 Hegel's template of concept formation

To support the claim that Peirce and Vygotsky are influenced by the Hegelian account of concept development, it is clearly important to articulate the contours of Hegel's original model. The purpose of this chapter is, therefore, to show how Hegel outlines how conceptual development begins with the mind's indeterminate perceptions. This discussion will introduce one of the main themes of this essay – the role of mediation in concept formation. This is a central feature of Hegel's model, and it also enjoys pivotal importance in Peirce and Vygotsky. Understanding Hegel's account of mediation is, therefore, critical. This is especially the case given that this is precisely where Peirce and Vygotsky are most frequently misconstrued by modern commentators.

Given the intrinsic weaknesses of 'secondary dualism', the current author has much sympathy with the Hegelian perspective on cognition. But it is also important to state that Hegel's broader mistake was to take this quite persuasive model of human knowledge and to extend it into his theories of history and of the state. None of these Hegelian pathways need to deflect us here; it is entirely possible to isolate his understanding of human cognition. Indeed, both Peirce and Vygotsky demonstrate that this is possible without venturing into the more controversial areas of Hegelian thought.

But before starting an analysis of Hegel's own position, it is also worthwhile briefly outlining some of the historical background to his thought. In particular, it is useful to highlight the influence on Hegel of both Spinoza and Leibniz. This is the case, not only because it elucidates aspects of Hegel's thought, but because Peirce was very familiar with Leibniz, and Vygotsky with Spinoza.

### 4.1 Background: Spinoza and Leibniz

Both Spinoza and Leibniz were influential in the history of German Idealism. When Hegel sought to reject the new direction in which Kant had taken European philosophy it was to these two philosophers that he often turned. These were not, of course, the only influences on Hegel and several other philosophers, in the early years of German Idealism, also played a significant role in the development of his thought. These were, for example, Maimon,<sup>15</sup> Fichte,

---

<sup>15</sup> Salomon Maimon ([1790] 2010), a Lithuanian contemporary of Kant, is one of the first philosophers to reject the consequences of Kant's position – including his intuitionism and his

and Schelling.<sup>16</sup> However, Spinoza and Leibniz were influential for Hegel because they provided a critique of the more damaging consequences of Kantian philosophy. And they also offered an account of reality that was both non-dualistic and relational in nature. This appealed to Hegel as he sought to establish a new platform for human knowledge.

Spinoza is, fundamentally, a 'monist' (Spinoza [1677] 1996: 71) and this is a term that has already been noted in Peirce. When Spinoza talks about the 'world', he is not discussing an objective 'reality' in the modern sense. What he is describing is a relational structure that is neither 'objective' nor 'subjective' in nature. Indeed, it makes no sense to think about Spinoza's concept of 'reality' in these modern terms – for they only came to have their current meanings in the centuries after his death.<sup>17</sup> In contrast to the modern stance, Spinoza construes

---

division of reality into the phenomenal and the noumenal. Many of Maimon's views came down to Hegel through the work of Fichte and Schelling.

**16** The scope of this essay does not permit a full analysis of the influence of Schelling on Peirce, but they have already been highlighted by semioticians such as Ivo Ibrí (2014). Even a cursory reading of Schelling's *System of Transcendental Idealism*, however, provides many examples of such influence. These include: a rejection of dualism (Schelling 1978: 5–11), the notions of 'positing' (Schelling 1978: 37), determination (Schelling 1978: 10), mediation (Schelling 1978: 15), schemas (Schelling 1978: 137), secondness or limitation (Schelling 1978: 56), the existence of 'thirds' (Schelling 1978: 89), sublation (Schelling 1978: 126), the nature of matter (Schelling 1978: 92), the interplay of form and content (Schelling 1978: 19–20), and the three-stage structure of concept formation (his first, second and third 'epochs') (Schelling 1978: 51–151). All these concepts, formed within the tradition of German Idealism, are developed by Hegel, and adopted by Peirce. They will be discussed, in a Peircean context, in this essay. Ibrí (2014: 39) also suggests that Schelling's advocacy of 'objective idealism' pre-dates Peirce's own position on the nature of reality.

Arran Gare also picks up on the links between Peirce and Schelling (Gare 2019: 38). His paper on biosemiotics highlights that not all causation is mechanistic (Gare 2019: 37), and that Peirce gives a role to 'final causes' in his philosophy. Gare also insists that reality is relational (Gare 2019: 49) and that, as a result, human knowledge has anticipatory features (Gare 2019: 47). He departs, however, from the account, given in this essay, of semiosis and views it as a form of causation (Gare 2019: 38) based on the interpretation of signs (Gare 2019: 42).

**17** The terms 'objective' and 'subjective' have almost entirely opposite meanings in pre-modern and early modern philosophy when compared with modern usage. The Oxford English Dictionary, for example, states that "scholastic philosophy made the distinction between what belongs to things subjectively, or as they are 'in themselves', and what belongs to them objectively, as they are presented to the consciousness. In later times the custom of considering the perceiving or thinking consciousness as pre-eminently 'the subject' brought about a different use of these words, which now prevails in philosophical language. According to this, what is considered as belonging to the perceiving or thinking self is called subjective and what is considered as independent of the perceiving or thinking self is called, in contrast, objective" (Oxford English Dictionary 1989: Vol X: 643). This construal is also confirmed by Deely (2009: 17),

‘reality’ as a single structure that is known by God, but which is potentially knowable (at least partially) by the human mind. It is tempting, of course, to view such an account of reality in strictly metaphysical terms, but this is an effect of the widespread modern assumption that objective reality must exist ‘behind’, or ‘beyond’, human perception. Spinoza, however, would not subscribe to this latter proposition.

Spinoza views reality as relational and this has implications for his treatment of human knowledge. He argues that when the mind encounters something, it only perceives what it is *partially* because it only experiences some of the relational connections that it possesses with the rest of the universe. As a result, the intellect can never know the entire nature of something, because to do so would entail knowing all these relational connections. Human knowledge, therefore, always begins as a series of “confused ideas” (Spinoza 1996: 51). As was noted above, this idea has already been encountered in Hegel’s and Peirce’s notion of perceptual ‘indeterminacy’.

In this context, Spinoza makes an important distinction between ‘adequate’ and ‘inadequate ideas’ (Spinoza 1996: 69). The former represents a form of knowledge where the mind knows enough of the empirical connections of an object to understand what it entails. An ‘inadequate idea’, in contrast, is one where this clarity of thought is yet to be achieved. Understanding the true nature of an object is determined, as a result, by gradually comprehending an object’s relationships with the world. When the mind has developed such an understanding of an object, such comprehension acts as an ‘instrument’, or mental ‘tool’ (Spinoza 1955: 12). This is because the concept now contains an understanding of how an object will behave in the future – a conclusion that will be encountered again in Peirce’s pragmatism.

As the mind’s knowledge of the world becomes more and more extensive, Spinoza argues that links are established between ‘adequate ideas’; they begin to form a whole. The growth of human knowledge is thus depicted as an evolutionary process in which human understanding builds incrementally. This is another theme that has parallels in Hegel, Peirce, and Vygotsky. They view

---

who argues that, in the pre-modern period, the term ‘subject’ meant “what is ‘brought under’ existence in its own right, what is cut off from the rest of the universe as an individual existent, a ‘subject of existence’, a substance – that ‘to which existence primarily comes, that which exists ‘in itself’ as a being in its own right, rather than ‘in another’ as a modification of a being in its own right, as a *characteristic* of an individual”. In other words, there is almost a complete reversal of meanings taking place here; a ‘subject’, to the pre-moderns, had similarities with what modernity now calls an ‘object’.

human knowledge as something that follows an ascending pathway from indeterminate perceptions to more clearly defined concepts.

In Leibniz, similar views can be found on the nature of reality and of human knowledge. Leibniz rejects Cartesian Dualism and construes the universe as being relational in nature. Where he differs from Spinoza, however, is in his rejection of the latter's 'monism'. Whilst Spinoza argues that everything in the world is part of one substance, Leibniz maintains that reality is a web of interrelating identities which he calls 'monads'. These, as will be seen later, have important similarities with Hegel's 'Notions'. Monads are relational and the properties of each one is defined by its relationships with other monads (Leibniz [1714] 1951: 523). Individual monads reflect, as a result, their overall position in the universe. Critically, these identities are not created by human interpretation, as they are in the nominalistic model. Instead, they constitute the structure of reality itself. Moreover, they have no separate identity of their own, but are, instead, defined by the *sum of their own relationships*. Critically, this means that they are not entities which first exist and then *have* relationships with other monads. Instead, they are, themselves, defined by their positions in the relational web of the universe.

For Hegel and Peirce, this Leibnizian framework is useful, but it needs to be nuanced. They must explain how this web of being is created, but (unlike Leibniz) they do not have recourse to God. And they each do this in a different way; Hegel construes the human mind as positing 'Essences', which develop into 'Notions', and become part of 'The Absolute Idea'. In contrast, Peirce adopts a different route and maintains that signs form identities which develop into symbols, and then systems of symbols. In both cases, however, Hegel and Peirce retain Leibniz's belief that the world is comprised of identities defined by their relationships with each other. To illustrate Hegel's stance, he talks, for example, of existence in the following manner (Hegel 2014: 149):

Existence is the immediate unity of reflection-into-self and reflection-into-another. It follows from this that existence is the indefinite multitude of existents as reflected-into-themselves, which at the same time equally throw light upon one another, – which, in short, are co-relative, and form a world of reciprocal dependence and of infinite interconnection between grounds and consequents.

And this can also be usefully compared with Leibniz's description of monadic relationships (Leibniz 1951: 523–524):

And as, because the world is a *plenum*, everything is connected and each body acts upon every other body, more or less, according to the distance, and by reaction is itself affected thereby, it follows that each monad is a living mirror, or endowed with internal activity, representative according to its point of view of the universe, and as regulated as the universe itself.

Hegel's description of "unity of reflection-into-self and reflection into other" thus echoes Leibniz's earlier exposition. The main difference, however, is that Leibnizian monads exist in the mind of God, whilst Hegel's Notions are the partial creation of the human intellect.

Leibniz also inherits many of Spinoza's views on human knowledge. He argues that only partial understanding of objects is possible and that human knowledge, therefore, must admit of degrees. Leibniz agrees with Spinoza that the mind possesses, initially, only 'confused ideas' and he concurs that these gradually develop into 'adequate ideas'. Leibniz, however, goes further; he breaks the latter concept into two types of idea; 'clear ideas' and 'distinct ideas'.<sup>18</sup> He maintains that when the human mind applies reason to the 'confused' ideas of perception, it first attains 'clear ideas': "I say, then, that an idea is clear when it enables one to recognise the thing and distinguish it from other things" (Leibniz [1704] 1996: 254). What defines a 'clear idea', therefore, is the fact that the intellect can distinguish it from others. This is achieved through recognition because the mind senses that something is like something else.

The next stage in the development of human knowledge is the 'distinct idea'. When differentiating 'clear' from 'distinct' ideas, Leibniz (1996: 255) suggests that "they are clear, because we recognise them and easily tell them from one another; but they are not distinct, because we cannot distinguish their contents". What makes an idea 'distinct', therefore, is the fact that the mind can now identify some of its contents. By this, Leibniz means that, when the mind begins to know an object, it starts to understand its connections with the world – both what is *contained*, and what is not *contained*, within the idea.<sup>19</sup>

---

**18** Spinoza's and Leibniz's interpretations of 'clear and distinct' ideas are often overlooked in the secondary literature on Peirce, but, in the early modern period, they formed a relatively sophisticated means of understanding how human concepts develop. In the semiotic literature, if they are mentioned at all, they tend to be interpreted, however, along Cartesian lines. Descartes' interpretation of these two concepts is very different from that of Leibniz and Spinoza. Descartes wants to show how his 'cogito' acts as a platform for human knowledge and how, as a result, it forms a guarantee of the mind's 'clear and distinct' ideas. In this Cartesian formulation, the latter begin to look like a form of 'intuitionism', when, in fact, in the hands of Spinoza and Leibniz, they represent precisely opposite. 'Clear and distinct' ideas, from the perspective of Spinoza and Leibniz, are gradual steps in the evolution of human concepts and knowledge.

**19** Despite these convergences between Peirce and Leibniz, Peirce sometimes categorises Leibniz as a 'nominalist' (EP2: 157). On occasions, he even does the same with Hegel. Given that both philosophers are deemed amongst the more 'metaphysical' thinkers in Western philosophy, this is a surprising claim. Peirce justifies his assertion, however, on the basis that both Leibniz and Hegel lack his category of 'secondness' – something that will be discussed in due course.

Leibniz agrees with Spinoza that the goal of the mind should be to reach an even higher level where it attains 'perfect ideas', but he accepts that only God can achieve this. What is evident, however, is that Leibniz advocates a hierarchy of ideas and proposes that the human mind ascends from one level to the next. This Leibnizian theme re-emerges in Hegel's dialecticism, in Peirce's sign classification, and in Vygotsky's description of how the "higher psychological functions" are created.

Other aspects of Leibnizian thought also emerge in Peirce's work. Leibniz argues that an 'adequate' (but partial) idea of an object entails a 'nominal definition'. However, when the mind knows more about an object, it begins to develop a 'real definition' of it. Of course, as with 'perfect ideas', the intellect cannot achieve the perspective enjoyed by God (and know the entirety of a 'real definition'), but it can, at least, strive to improve upon its 'nominal definitions'. As will be noted later, Peirce adopts this Leibnizian framework in his account of the 'object' in the sign when he makes a distinction between 'immediate' and 'dynamic' objects.<sup>20</sup> This view is, again, based on a conceptual ascent taking place within human knowledge (Barnham 2020: 116–120).

The model of the relational universe, adopted by Leibniz, can be outlined in diagrammatical terms. In this model (Figure 2) a structure of interrelated identities is depicted. Because these monadic identities are connected to each other, and are defined by their inter-relationships, they form what Peirce calls a 'synechistic' model of reality that is both non-dualistic and continuous in nature (EP2: 1). Significantly, in this context, Leibniz views the human soul itself as being no more than one monad amongst others in the universe. Of course, it has certain characteristics that make it different from other monads – importantly it has consciousness – but this feature does not detract from the fact that it is one monad immersed amongst many. In such a system, there can be neither 'subjective', nor 'objective', stances, and there can be no detached 'spectator' position.

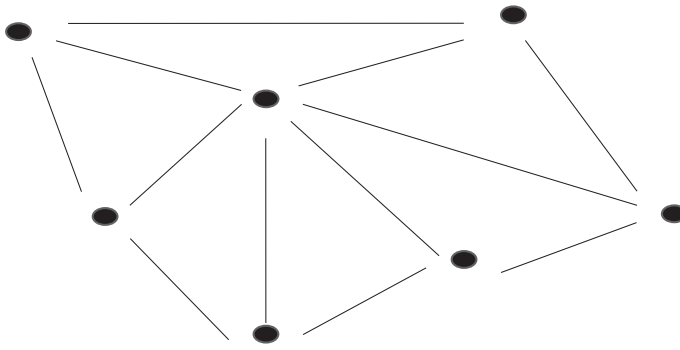
This relational view of reality has often been highlighted by biosemioticians. They emphasise the universe's complexity and that humans are part of a biosemiotic "web of connections" (Wheeler 2006: 32). They also recognise that this relational view of reality challenges the dualistic views of modern science (Wheeler 2006: 53). But what they do not always acknowledge is that their

---

**20** Whilst Peirce is aware of Leibniz's separation of 'confused' and 'distinct' ideas, he will have also encountered the same distinction in Duns Scotus. Aertsen (2012: 403–404) notes, discussing Duns Scotus, that "in the order of origin, confused knowledge is prior to distinct knowledge, since confused cognition takes an intermediary position between complete ignorance and distinct knowledge". Peirce, therefore, was keenly aware of the philosophical history of this approach to human knowledge founded on an ascent through *types* of idea.



relational model has quite different characteristics to that of Leibniz. Whilst bio-semioticians claim that the world is made up of organisms connected by a web of *interpretative* signs, Leibniz makes the far more radical claim that monads are, in fact, *real identities* defined by their relationships with each other. This latter position is also held by Peirce, and it marks a significant point of divergence between Peirce and modern biosemiotics. As will be seen, Peirce is closer to Leibniz's account of a relational universe because his system establishes a web of semiotic identities; he does not espouse a system of inter-connected *interpretations*.



**Figure 2:** Leibniz: A Relational Model of Reality.

If we review the commentaries on Peirce and Vygotsky, there is relatively little in the secondary literature that emphasises their potential connections to Spinoza and Leibniz. A possible exception is Fisch's article entitled '*Peirce and Leibniz*' (1986a), but this is largely a discussion of Peirce's own views on Leibniz's status as a philosopher. Fabbrichesi (2011) has also written a short article on the relationship between Peirce and Leibniz's theory of a universal language. The most fruitful discussion of Leibniz's underlying influence on Peirce, however, can be found in a paper by Bellucci (2013: 331–355). Here, he recognises that certain parallels can be drawn between Leibniz and Peirce – noting their similarities in relation to 'clear and distinct' ideas, and 'nominal' and 'real definitions'. Beyond these instances in the Peircean exegesis, one finds few mentions, however, of Leibniz in works on Peirce. In this context, it is perhaps quite telling that it is a Leibnizian scholar, Loemker, who maintains that Peirce "knew Leibniz better than any other American of his time" (Loemker 1989: 57).

In respect to Vygotsky, there is more widespread recognition of the influence of Spinoza on his work. Jan Derry (2013), as noted above, highlights the impact of Spinoza on Vygotsky, but she does not extend her analysis to Peirce. Elsewhere, Spinoza's role in Vygotskian thought is sometimes acknowledged,

but seldom explored in detail. Discussion often amounts to no more than an observation that Spinoza was one of many earlier sources read by Vygotsky (Meshcheryakov 2007: 155; Bakhurst 2007: 50). As discussed, few commentators seek to explore the philosophical connections that exist between Leibniz and Spinoza, on the one hand, and Peirce and Vygotsky, on the other.

## 4.2 The Hegelian template

The works of Hegel are renowned for their complexity. Indeed, one commentator has called *'The Science of Logic'* (Hegel: 2014) "the single densest book ever written" (Carlson 2007). A full exploration of Hegel's thought will not, therefore, be attempted here. Instead, Hegel's views on concept formation will be outlined in some detail. They act as a useful reference point for our later discussions of Peirce and Vygotsky.

Hegel begins his account of concept formation by rejecting Cartesian Dualism. As highlighted, he also discounts the idea that the mind has knowledge of its sense data. Instead, he contends that intellect is initially confronted by indeterminate 'Being'. He claims (Hegel 2014: 101) that "pure Being makes the beginning: because it is on the one hand pure thought, and on the other, immediacy itself, simple and indeterminate; and the first beginning cannot be mediated by anything, or be further determined". This confirms Hegel's rejection of 'secondary dualism' and, like Peirce, he asserts that perceptual indeterminacy is also 'immediate'. There is thus no Kantian 'veil of perception' separating the human mind from Being.

Faced with this perceptual indeterminacy, Hegel argues that the mind posits a putative identity – an 'Essence'. This parallels the activity, encountered earlier in Peirce and Vygotsky, when the intellect picks out a specific quality, or object, from the perceptual continuum. As noted, this involves hypothesising that a quality, or an object, can be classified as one thing and not another. In Hegel's terminology, the Essence thus begins the transition towards conceptual 'determinacy' (Hegel 2014: 109):

Hence Being Determinate is (1) the unity of Being and Nothing, in which we get rid of the immediacy in these determinations, and their contradiction vanishes in their mutual connection – the unity in which they are only constituent elements. And (2) since the result is the abolition of the contradiction, it comes in the shape of a simple unity with itself: that is to say, it also is Being, but Being with negation and determinateness.

With a posited Essence, therefore, Hegel moves from immediate Being to a position in which Essences are distinguished from each other. For example, Hegel asserts that (Hegel 2014: 133):

In the sphere of Being the reference of one term to another is only implicit: in Essence on the contrary it is explicit. And this in general is the distinction between the forms of Being and Essence: in Being everything is immediate, in Essence everything is relative.

These relational Essences remain, of course, little more than perceptual hypotheses. Hegel argues that “the sphere of Essence thus turns out to be an imperfect combination of immediacy and mediation” (Hegel 2014: 137). They should be understood, therefore, as mental approximations to reality and they contain intrinsic contradictions. Hegel argues that the mind can improve upon this position by identifying, and then eradicating, these contradictions. It is this which initiates his advocacy of dialecticism. He maintains that by analysing the contents of posited Essences, the intellect can identify their inner contradictions and render them more accurate manifestations of reality. Critically, he sees this dialectical process as a *logical* one – hence his claim to a ‘*Science of Logic*’. And this invocation also underpins one of his more famous claims for human rationality that, “what is reasonable is actual; and what is actual is reasonable” (Hegel 2014: 5).

Hegel acknowledges the inner contradictions which are inherent in a posited Essence and thus calls them ‘appearances’. He maintains, consequently, that Essences contain “intrinsic instability” (Hegel 2014: 156):

Appearance is higher than mere Being, – a richer category because it holds in combination the two elements of reflection-into-self and reflection-into-another: whereas Being (or immediacy) is still mere relationlessness, and apparently rests upon itself alone. Still, to say that anything is only an appearance suggests a real flaw, which consists in this, that Appearance is still divided against itself and without intrinsic stability.

Hegel is also keen to emphasise two other aspects of these ‘appearances’. Firstly, he claims that they are not atomised perceptions, as would be the case in ‘secondary dualism’. As putative identities, they contain elements of Being which may, or may not, be included later in more developed concepts. This is important, because Hegel makes a distinction between Locke’s abstract ideas (which are defined by *one* element only), and his own Essences which contain *many* (relational) elements. This is why he contends that “in connection with thought, the main thing is not to confuse the true Identity, which contains Being and its characteristics ideally transfigured in it, with an abstract Identity, identity of bare form” (Hegel 2014: 139).

Secondly, Hegel insists that the internal structure of his 'appearances' entails a significant challenge to conventional understanding of the relationship between form and content. As was seen, in 'secondary dualism', this relationship only works in one direction. Content comes first, and form (via identity) is imposed by the inspecting mind. Hegel argues, however, that this is wrong. Because Essences are posited by the mind on the basis of something being one thing and not another, they are already *forms*. This means that an Essence does not represent a content passively awaiting form to be conferred upon it. Hegel thus maintains that "the essential point to keep in mind about the opposition of Form and Content is that the content is not formless, but has the form in its own self, quite as much as the form is external to it. There is thus a doubling of form" (Hegel 2014: 157).

As will be seen later, Peirce agrees with Hegel that the relationship between form and content can be reversed. It will be suggested (in chapter 10) that, in forming a Peircean sign, an icon, or 'form', comes first, and indexical 'content' then follows it. And in addition to this, Peirce also insists that any new content (experienced through secondness) can always qualify an existing 'form' or create a new one. None of these possibilities occur, of course, in 'secondary dualism' where form and content are intrinsically separated from each other. Their relationship is always linear because form can only be imposed on content through interpretation.

Returning to Hegel, he argues that, in his dialecticism, concepts become progressively more refined. The human intellect learns to retain certain features of a concept and revise others. Hegel calls this the "speculative stage" (Hegel 2014: 91) in concept formation and this is echoed by Peirce with his "speculative grammar" (EP2: 260). Importantly, in Hegel's dialecticism, the mind identifies how a particular Essence is connected to others and becomes a universal. As noted, Hegel's vision of this concept is very different to that of Locke; the latter's conception of a universal is always exhausted by a single quality. For Hegel, in contrast, a universal emerges as it becomes ever more concrete, and more connected, with the empirical world. It follows from this that a Hegelian universal should be viewed as a concept finding its place *in* the universe; it is not something abstracted *from* the universe. This view is adopted by British neo-Hegelians, such as Bosanquet and Bradley, at the end of the nineteenth century. When defining a 'concrete universal' they see it as involving what they call "identities in difference" (Acton 1936: 422). A concrete universal is, therefore, an identity which continues to exist *despite* the different relationships in which it becomes enmeshed. As such, Acton argues, in Leibnizian fashion, that (Acton 1937: 1):

Julius Caesar is a universal because he is the *same* individual, although engaged in *different* activities, such as fighting in Gaul, marching in Italy, and so on. Abstracted from his various activities, he is nothing; they are the differences which are required to make him the identity he is.

Through the actions of dialecticism, Hegel claims that the human mind is able to create new concepts which resolve the contradictions present in earlier versions of an Essence. Hegel uses an important term to describe this activity and it is one that both Peirce and Vygotsky borrow in their work; this is the concept of *‘aufheben’* or ‘sublation’ (Hegel 2014: 116). This important intellectual activity carries out two actions simultaneously; it *preserves* what is present in an emerging concept and *elevates* it to a higher level where its contradictions are removed, and it can work in harmony with other Essences. As will be seen, this Hegelian concept is critical to Peirce’s concept of ‘thirds’ and it is present in Vygotsky’s account of the ‘higher psychological functions’. Critically, for all three thinkers, sublated concepts become the very mechanisms *through* which human beings experience the world. As such, Peircean ‘thirds’, for example, enable the intellect to think about reality in ways which go beyond its immediate sense data. Hegel states, as a result, that “The **Notion** is the principle of freedom, the power of substance self-realized” (Hegel 2014: 187). And Vygotsky concurs on this point; it is sublated concepts which enable humans to reach levels of conceptual sophistication above those of animals.

Hegel suggests that, as Essences develop, they also begin to form a network of inter-relating Notions. This echoes the Leibnizian model discussed earlier. These Essences are not ‘ideas’ in the Lockean sense; rather they are concepts developing relational concreteness. For this reason, Hegel claims that “as it was before remarked, the notion is a true concrete; for the reason that it involves Being and Essence, and the total wealth of these two spheres with them, merged in the unity of thought” (Hegel 2014: 187–188). The dualisms of subjectivity and objectivity thus merge and Hegel is able to maintain that “if the Object, the product of this transition, be brought into relation with the notion, which, so far as its special form is concerned, has vanished in it, we may give a correct expression to the result, by saying that notion (or, if it be preferred, subjectivity) and object are *implicitly* the same” (Hegel 2014: 215).

In Hegel’s view, these interlocking Notions, emerging through the actions of dialecticism, eventually establish what he calls the ‘Absolute Idea’ and this leads him to advocate his ‘Absolute Idealism’ (Hegel 2014: 187) in which a web of Notions are in harmony with each other. It must be emphasised, again, that this outcome is not the same as the phenomenology advocated by modern social constructivists. Hegel would have firmly rejected their view that human concepts are culturally defined. Instead, he views his emerging concepts as

being dialectically determined, at least partially, by reality itself. It follows from such a position that human beings are not free to construct their own versions of the world – at either a cultural or individual level.

Before concluding this chapter, it is also useful to highlight two further aspects of Hegelian thought which influence Peirce and Vygotsky. Firstly, it is significant that Hegel's account of concept formation, as outlined above, is triadic in structure. There are three stages in his system: Being (*sein*), Essence (*wesen*) and Notion (*begriff*). Peirce, as is well known, also uses triadic structures in his semiotics. In Peirce, there are two versions of these. On the one hand, he proposes three categories – firstness, secondness and thirdness. On the other, he advocates a triadic structure for the sign itself consisting of the representamen, the object, and the interpretant. These two sets of triadic structures will be explored in chapters five and six.

The second aspect of Hegel's system, which influences both Peirce and Vygotsky, is the critical idea of *mediation*. As highlighted above, Hegel explains human concept formation by proposing the idea of a mediating Essence posited by the mind. It is this entity which encapsulates the intellect's initial hypothesis of an experience, and which forms the vehicle for later dialecticism. The Hegelian Essence becomes, as a result, the locus of concept formation because it is here that experience is logically resolved by the mind. This amalgamation of the experiential and the rational *within* a mediating entity is a central aspect of Hegel's philosophy. It is how he overcomes the binary poles inherent in 'secondary dualism'.

This idea of mediation is also present in Peirce and Vygotsky. For example, Peirce describes the synthesis of thought and experience in the sign as "concrete reasonableness" (CP5: 3), whilst Vygotsky talks of human concepts as an "amalgam" (Vygotsky 2012: 225). In using such terminology, both Peirce and Vygotsky echo Hegel who had previously employed similar synthetic metaphors – those of "welding" (Hegel 1894: 457) and "fusion" (Hegel 1894: 458).

Inwood, when discussing the Hegelian model, also highlights (Inwood 1992: 185) the triadic nature of Hegel's thought and how the idea of mediation is central to his account of concept formation:

Thus, mediation and immediacy form not a dyadic opposition, but a triad:

- 1) Bare (but still relative immediacy)
- 2) Mediation
- 3) Mediated Immediacy, in which an entity's mediation is taken up into it

This pattern is repeated. The mediated immediacy that concludes one triad is the bare immediacy that opens the next.

In this triadic structure, “bare immediacy” is the indeterminate perceptual state involved in experiencing ‘Being’. The second stage, that of “mediation”, takes place as the posited Essence becomes dialectically refined. In the third stage, a Notion is gradually formed, and the mind uses this emerging concept as a reflexive ‘tool’ to experience the world (Barnham 2020: 111). Inwood explicitly refers to this reflexive quality when he states above that “the mediated immediacy that concludes one triad is the bare immediacy that opens the next”.

What is important in this discussion, however, is that Hegel, Peirce, and Vygotsky all believe that the ‘mediation’ is vital component of concept formation. However, the Hegelian approach to mediation, which Peirce and Vygotsky later adopt, has been largely overlooked by modern commentators. In the case of Peirce, this occurs when semioticians evaluate the triadic structure of his sign. In their analyses, they frequently place the ‘object’ at the beginning of the signifying process, when, in fact, it should be placed, in a *mediating* position, *within* his sign structure. Equally, in the case of Vygotsky, the Hegelian idea of mediation has been radically transformed by commentators. They reframe it in ways which have overtones of social constructivism. Instead of focusing on the mediating nature of Vygotsky’s ‘word meaning’, commentators frequently construe ‘mediation’ as a *social activity* operating through specific cultural mechanisms. Vygotsky’s invocation of ‘words’ and ‘speech’, as critical factors in concept formation, means, of course, that this is an extremely easy mistake to make. But, as will be seen in due course, such modern interpretations gloss over the Hegelian influences that underpin Vygotsky’s own views on mediation.

## 5 Peirce: The three categories

In this chapter, the first of Peirce's two triads are analysed. Immersed in the Phaneron, Peirce argues that the mind experiences reality through three categories, or logical modes, of being (EP2: 143). These categories are monadic, dyadic, or triadic in nature and they equate to possibility, actuality, and necessity (EP1: 7). It is on this basis that Peirce establishes his categories of firstness, secondness, and thirdness.

The idea of experiential 'categories' first emerges with Kant. He suggests they are four in number (e.g., quantity, quality, relation, and modality). This approach is then adopted by Hegel, but in a different form. As already discussed, Hegel asserts that there are, instead, three stages (or 'moments') in experience – Being, Essence and Notion. And Peirce openly acknowledges that his own categories follow Hegel's structure when he states that "they agree substantially with Hegel's three moments" (CP2: 87). Incidentally, Peirce also maintains there can be no 'fourths' because these (if they did exist) could be re-analysed as triadic relationships (CP7: 537).

Before discussing Peirce's categories in detail, it is important to highlight some potential traps for the unwary. Peirce's three categories, at first glance, seem to map onto the familiar structures and terminology of the 'nominalist' position espoused by Locke. The latter maintains that the world comprises 'qualities' ('secondary qualities'), objects ('primary qualities'), and the laws of nature (formed by the inspecting mind). These divisions appear to equate, respectively, to Peirce's notions of firstness, secondness and thirdness. But to assume this convergence would be a profound mistake. In fact, all three of Peirce's categories operate differently to the Lockean model. These will be analysed during this chapter, but the most critical point of difference should be emphasised upfront. Peirce argues that 'thirds', instead of being mental constructions (in line with 'secondary dualism') are, in fact, phenomena which *exist* in the world. Peirce certainly acknowledges that the mind is involved in their creation, giving them synthetic existence, but he rejects the claim that the human intellect is solely responsible for them.

### 5.1 Firstness

Peirce's initial category of firstness is monadic, and it transcends the properties which are conventionally applied to philosophy's ideas of 'sense impressions' or 'qualities'. 'Firsts' share some of the properties of these more familiar philosophical



concepts, but, at the same time, they also substantially reframe them. Most importantly, Peirce does not view ‘firsts’ as mental ‘effects’ in line with Locke’s ‘secondary qualities’. Firstness is a category of *being* which exists in the world, and which is perceived directly (EP2: 150):

Imagine if you please, a consciousness in which there is no comparison, no relation, no recognised multiplicity (since parts would be other than the whole), no change, no imagination of any modification of what is positively there, no reflexion, – nothing but a simple positive character. Such a consciousness might be just an odour, say a smell of attar; or it might be one infinite dead ache; it might be the hearing of [a] piercing eternal whistle. In short, any simple and positive quality of feeling would be something which our description fits, – that it is such as it is quite regardless of anything else. . . . The first category, then, is Quality of Feeling, or whatever is such as it is positively and regardless of aught else.

The category of firstness also possesses a degree of spontaneity. It is ‘fresh’ because it has yet to be determined (e.g., compared with anything else) by the mind (EP1: 248):

It must be fresh and new, for if old it is second to its former state. It must be initiative, original, spontaneous, and free; otherwise, it is second to a determining cause. It is also something vivid and conscious; so only it avoids being the object of some sensation. It precedes all synthesis and all differentiation: it has no unity and no parts. It cannot be articulately thought: assert it, and it has already lost its characteristic innocence; for assertion always implies a denial of something else. Stop to think of it, and it has flown!

A ‘first’, therefore, is a quality, but if the intellect begins to think about it, or compare it with other firsts, it immediately ceases to be a ‘first’. It is a quality, but as soon as an attempt is made to specify what it is, a description of it is created. As Boler notes, a ‘first’ is a “*bare thisness*” (Boler 1963: 122). As such, it has a status akin to Peirce’s ‘percept’ before it becomes a ‘perceptual judgement’. Moreover, a ‘first’ is never experienced as a ‘atomised’ sense datum. It is only experienced as it is *embodied* in something else. As such, it is always experienced as necessarily conjoined with other percepts and it can only be considered as a ‘first’ (Short 2007: 75) if the mind prescind it from the embodied state in which it is initially experienced.

When Peirce offers instances of ‘firsts’ he provides examples that can be recognised as Lockean ‘qualities’ – such as the sensations of colour and warmth. But he also mentions other examples such as the ‘emotional’ reaction one feels when watching a performance of *King Lear* (CP1: 531), or the effect of listening to a piece of music (CP5: 475). This explains his description of ‘firsts’ as types of “consciousness”; they are not atomised sense impressions. Indeed, if we look at the precise terminology that Peirce uses to describe ‘firsts’, he often talks about them as “qualities of feeling” (EP2: 150) – phraseology that conflates two aspects

of experience which are neatly separated by ‘secondary dualism’ – where ‘qualities’ are *what* is experienced and ‘feelings’ are their *effects* upon us. Peirce, therefore, runs the two notions together. This inclusion of “qualities of feeling” in experience also explains why Peirce refuses to limit our experience of ‘firsts’ to the narrow range permitted by the five senses. Experience now includes, as it does for Hegel, how individuals *feel* in the world.<sup>21</sup> A ‘first’ can, for example, be how someone feels as they walk into a room of strangers. Critically, however, Peirce still emphasises that a ‘first’ remains a simple feeling (EP1: 275) – even though the phenomenon experienced (such as a performance of *‘King Lear’*) can be complex.

Peirce also maintains that ‘firsts’ are real. In a passage entitled the *‘Reality of Firstness’*, he again asserts that they are different to the ‘sense impressions’ of empiricism. He argues that “but as for Qualities, they are supposed to be in consciousness merely, with nothing in the real thing to correspond to them except mere degrees of more or less . . . . But when one considers the matter from a *logical* point of view the notion that qualities are illusions and play no part in the real universe shows itself to be a peculiarly *unfounded* opinion” (EP2: 187–188).

Peirce’s ‘firsts’ should also be compared with universals. It has been noted that Hegel rejects the conventional view that universals are abstracted sense data based on a single quality. However, because a Peircean ‘first’ can be ‘greenness’ or ‘blueness’, it is quite easy to assume that it, too, has been abstracted by the mind. Peirce, however, insists that we should distinguish between two separate activities. These are ‘abstraction’ and ‘prescision’. For nominalists, an abstract idea is created when the mind identifies shared qualities between its perceptions. The intellect has an idea of blueness because it identifies similarities amongst several blue things. For Peirce, however, the activity of ‘prescision’ is quite different – it is the mental action of removing a quality (a ‘first’) from its embodied state. This creates a new mental entity, but not one that is formed by grouping together atomised perceptions. As a result, Peirce insists that a ‘first’ retains its underlying relationships with other qualities and cannot be detached from the context in which it is experienced. The reason for this, of course, is that a ‘first’ only exists as it does within a specific context. It is not, therefore, a free-standing quality (known directly); its quality remains entirely dependent upon its context even when it has been prescinded.

---

<sup>21</sup> It is of note that Peirce even borrows a Hegelian term when describing ‘firsts’. On occasions, Hegel talks of a *‘prius’* (e.g., Hegel [1830] 1894: 381). This is because Hegel places the ‘first’ at the beginning of his logical dialecticism.

To illustrate this, Peirce offers the example of a diamond and the quality of ‘hardness’. He states that “this diamond’s condition is not an isolated fact. There is no such thing; and an isolated fact could hardly be real. It is an unsevered, though presciss, part of the unitary fact of nature” (EP2: 356). Hardness is thus not a ‘property’ of the diamond in any absolute sense; it does not exist separately from the various contexts in which the diamond is found (Gallie 1952: 191). The hardness of the diamond is not, as a result, a known ‘fact’. It is simply a relational *possibility* that exists within the diamond itself, which is either actualized, or not, according to the contexts in which it is found. And, critically, it follows from this that the intellect does not know all the relational properties of the diamond because it has not been experienced in all possible circumstances. The stone may contain new properties that arise in new contexts, and which exist only ‘*in potentia*’. The diamond could, for example, become a liquid if taken to Pluto. This parallels the shared insight of Spinoza and Leibniz that the mind has only partial knowledge of the world.

To summarise, Peircean ‘firsts’ appear to be a category of experience which has similarities with the atomised ‘secondary qualities’ of nominalism. But these similarities are misleading. ‘Firsts’ are perceived directly; they are not mental ‘effects’ and, as a category of being, they are also real. Moreover, they combine both experiential and mental characteristics because, as prescinded qualities, they can only be experienced in embodied form. This also means that they are intrinsically relational in nature and are quite unlike the abstract ideas of the nominalist tradition.

## 5.2 Secondness

The category of secondness, as the name suggests, is fundamentally dyadic in nature; it involves the interaction of two entities. And secondness operates in two ways; either between the world and the self, or between two observed ‘objects’ in the world. Peirce provides an example of the former; the pressing of one’s shoulder against a half open door (EP2: 150). This action involves effort on one’s own part, but also the resistance of the door itself. Another example is the experience of being hit on the head by a man carrying a ladder (EP2: 150). On both occasions there is effort and resistance; secondness involves an acknowledgement of something ‘other’ impinging upon the senses (EP1: 249):

We find secondness in occurrence, because an occurrence is something whose existence consists in our knocking up against it. A hard fact is of the same sort; that is to say, it is something which is there, and which I cannot think away, but am forced to acknowledge

as an object or second beside myself, the subject or number one, and which forms material for the exercise of my will.

Secondness is also experienced when the mind observes two objects interacting with each other in the world; a diamond being scratched is an example. It is important to emphasise, however, that these actions should be treated as ‘raw’ experiences – they do not involve any knowledge of causal laws because these would be ‘thirds’. Peirce thus maintains that any experience of a ‘second’ cannot be extrapolated into the future. He contends that “we not only thus experience Secondness, but we attribute it to outward things; which we regard as so many individual objects, or quasi-selves, reacting on one another. Secondness only is while it actually is. The same thing can never happen twice” (EP2: 268). Secondness, therefore, is a dyadic interaction perceived *momentarily*; it does not involve two entities *having* a relationship because this would last through time. And Boler agrees on this point, suggesting that “although secondness can be experienced, it is non-conceptual” (Boler 1963: 122). This, however, still leaves open the possibility that secondness is, in fact, a *single* experience of a dyadic event. As such, it might be argued that secondness could collapse into firstness. Peirce, however, rejects this; a ‘second’ always involves the additional sense of *limiting* a ‘first’. Of necessity, it must involve a sense of resistance; it is how the mind discovers its limits in the world.<sup>22</sup>

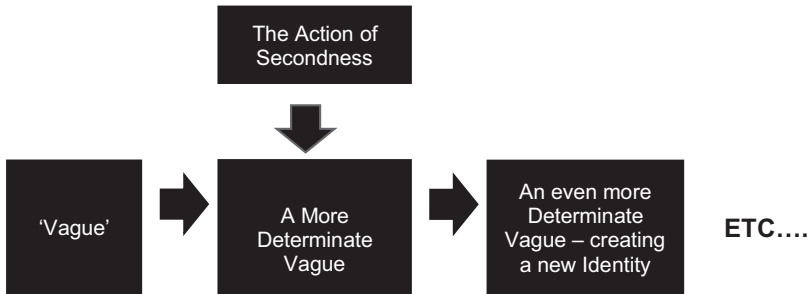
Secondness can thus be construed as the experience of something ‘other’. Care must be taken, however, to avoid the mistaken conclusion that this amounts to objectivity. As noted, Peirce is anti-dualist and his notion of secondness does not equate to the existence of an ‘objective world’ of matter. This is occasionally misunderstood by commentators. Olteanu, for example, argues that “objectivity is the definition of secondness” (2015: 267), whilst Semetsky concludes that ‘seconds’ are “matter” (2010: 64), or “the mechanical aspect” of the natural world (Semetsky 2010: 66). In contrast, secondness should be understood within Peirce’s account of perception. Critically, as was noted above, he construes human perceptions as being *indeterminate*. The central role of secondness is, as a result, to set limits on this indeterminacy. This is why Peirce describes secondness, in the first quotation in this section, as being “a hard fact” (EP1: 249) and why

---

<sup>22</sup> There is a parallel here between Peirce’s concept of secondness and Merleau-Ponty’s account of the human body. The latter describes it as follows: “The body is the vehicle of being in the world and, for a living being, having a body means being united with a definite milieu, merging with certain projects, and being perpetually engaged with therein”. (Merleau-Ponty 2012: 84). This also parallels Noë’s invocation of human sensorimotor skills (Noë 2004: 35–73) as an intrinsic and necessary part of perceptual acts.

Peirce often uses two key terms when discussing secondness – those of “struggle” and “surprise”. Peirce states that “the next simplest feature that is common to all that comes before the mind, and consequently, the second category, is the element of *Struggle*” (EP2: 150). And he confirms this by asking “precisely how does this action of experience take place? It takes place by a series of surprises” (EP2:154).

The category of secondness, therefore, involves the discovery that the world is not how we expect it to be.<sup>23</sup> This is an important feature of Peirce’s account of concept formation. It is through secondness that he believes reality plays a role in this process. This can be illustrated (Figure 3) by showing how secondness limits the indeterminacy of ‘vague’ perceptions:



**Figure 3:** The Action of Secondness Determining ‘Vagues’.

For Peirce, this incessant activity of secondness limiting indeterminacy is how reality determines the content of human concepts. Crucially, these concepts can only contain the meanings that reality permits them to have; they acquire an ever more determinate character dictated by the world itself. Peirce states (EP2: 24), for example, that:

<sup>23</sup> There is a delicious irony here. As students of philosophy know well, the scepticism of Descartes is based on the observation that the mind is sometimes surprised by its senses. For example, a stick can look bent when placed in water. Descartes uses such examples to suggest that philosophers should not trust their senses. But with the idea of secondness, Peirce takes exactly the opposite view. The fact that the world surprises us is evidence that ‘something’ is there; it imposes its effects on the mind’s nascent ideas. Peirce, therefore, turns the sceptical argument on its head. Indeed, Descartes’s position is only credible if it is first accepted that the mind ‘knows’ its sense data. But neither Hegel, nor Peirce, would agree with his premise.

It thus appears that all knowledge comes to us by observation. A part is forced upon us from without and seems to result from Nature's mind; a part comes from the depths of the mind as seen from within, which by an egotistical anacoluthon we call *our* mind.

Ibri concurs with this argument, and highlighting Peirce's 'objective idealism' which includes a role for reality in concept making, he argues that (Ibri 2014: 39):

The act of constantly dealing with the object, with that which can always, potentially, object to its representation, must lead to the admission of an objective reality, indifferent to any constituting appropriation of a subjective nature.

Likewise, Romanini agrees, in the same volume, that the role of reality is to *challenge* human understanding. He states that "the friction of experience is Peirce's second category, or Secondness" (Romanini 2014: 221).

It is useful, at this point, to compare Peirce with Saussure. To take an example, Saussure might argue that a particular culture has *arbitrarily* separated 'tigers' from domestic 'cats' – by using two different terms to denote them. Saussure might claim, indeed, that this culture could have called them both 'cats'. Peirce would point out, however, that this would be very foolish; his category of secondness would create 'surprise'. If members of this culture attempted to feed the large stripy 'cat', it might well eat them instead. Reality, in the form of 'secondness', would thus demonstrate to us that cats and tigers are very different identities. As such, Peirce would argue that the mind is not at liberty to 'divide up' the world in the manner advocated by Saussure. Instead, in '*A Guess at the Riddle*', Peirce maintains that this is precisely how secondness operates. He states that "it [secondness] is very familiar, too; it is forced upon us daily: it is the main lesson of life. In youth the world is fresh, and we seem free; but limitation, conflict, constraint and secondness generally, make up the teaching of experience" (EP1: 249). Secondness is, therefore, the action of reality upon the human mind. It limits the scope of our initially indeterminate concepts and forces us to revise their inclusions.

Importantly, in this discussion, Peirce's relationship with Hegel also comes to a head with his concept of secondness. Indeed, the vehemency of Peirce's attack on Hegel on this issue simply confirms that his own project has much in common with that of Hegel. In some ways, however, Peirce's account seems to follow Hegelian lines; Peirce even talks about secondness as a confrontation between the "ego" and the "non-ego" (EP2: 154). But Peirce fundamentally diverges from Hegel with his claim that the latter gives too little emphasis to secondness in the development of concepts. This, in Peirce's view, involves a serious neglect of what he calls the "Outward Clash" (EP1: 233). And it is this oversight which leads Peirce to describe Hegel (EP2: 156–157), rather misleadingly, as a nominalist.

In Peirce's view, Hegel's triadic model describes the development of human knowledge, but it removes reality too much from the dialectical process and renders the latter an entirely mental and logical activity. This position, Peirce argues, is deeply flawed; the mind, he argues, cannot ascertain the true nature of Hegel's Essences by simply considering their inner contradictions. Logic, Peirce believes, cannot perform this task by itself; only secondness can provide the necessary 'surprises' required to revise human thinking. Peirce contends, as a result, that Hegel fails to grant reality a big enough role in concept formation (EP1: 233):

The capital error of Hegel which permeates his whole system in every part of it is that he almost altogether ignores the Outward Clash. Besides the lower consciousness of feeling and the higher consciousness of nutrition, this direct consciousness of hitting and of getting hit enters into all cognition and serves to make it mean something real.

And (EP1: 237):

When Hegel tells me that thought has three stages, that of naïve acceptance, that of reaction and criticism, and that of rational conviction; in a general sense, I agree to it . . . . But be that as it may, the idea that the mere reaction of assent and doubt, the mere play of thought, the heat-lightning of the brain, is going to settle anything in this real world to which we appertain, – such an idea only shows again how the Hegelians overlook the facts of volitional action & reaction in the development of thought. I find myself in a world of forces which act upon me, and it is they and not the logical transformations of my thought which determine what I shall ultimately believe.

But is Peirce justified in this criticism? The general tone of Hegel writings would suggest that Peirce is correct. But Peirce, in fact, overlooks key aspects of Hegel's position. Firstly, the Hegelian Notion evolves from an Essence which is, itself, derived from reality. As such, Essences contain, potentially, everything that is required for an '*Outward Clash*' to occur within their inner contradictions. Hegel states, for example, that "and yet, as it was before remarked, the notion is a true concrete; for the reason that it involves Being and Essence, and the total wealth of these two spheres with them, merged in the unity of thought" (2014: 187–188). Nagl picks up on this argument and points out that "Hegel's core idea that *Aufhebung* implies *not one but three* meanings: not only *negatio*, but also *conservatio* and *elevatio*. If this insight is considered, neither 'immediacy' (Firstness), nor the 'outward clash' (i.e., the surprise-generating difference between hypothesis and object) can be said to disappear *in toto* in Hegel's 'mediation'" (Nagl 2014: 433).

Secondly, the on-going nature of experience always brings new Essences into Hegel's dialectical process. These demand integration with existing Essences and so reality continually provides new inputs into concept formation. Thirdly, Peirce also overlooks the fact that Hegel insists that human concepts

reflexively inform perception. This means that each time a concept is used, the intellect is re-evaluating its utility in the world; the mind may thus encounter new phenomena which demand revisions to its concepts. As such, it seems that Hegel does, in fact, preserve a major role for reality in concept formation. And Hegel, in the same passage cited above, even rejects the position that Peirce accuses him of holding (Hegel 2014: 189–190):

The Logic of the Notion is usually treated as a science of form only, and understood to deal with the form of notion, judgment, and syllogism as form, without in the least touching the question of whether anything is true. The answer to that question is supposed to depend on the content only. If the logical forms of the notion really were dead and inert receptacles of conceptions and thoughts, careless of what they contained, knowledge about them would be an idle curiosity which the truth might dispense with. On the contrary they really are, as forms of the notion, the vital spirit of the actual world.

This passage shows that Hegel is alert to the potential challenge that his emergent Notions could become detached from reality. This interpretation of Hegel is also supported by Kaag, who points out that Hegel's concept of Essence, in the German, is '*Wesen*' and that this "stems from '*Gewesen*' (been), the past participle of *Sein*" (e.g., '*Being*'). Kaag argues, as a result, that a Hegelian Essence will include previous empirical experiences (Kaag: 2011). It seems, therefore, in his eagerness to distance himself from Hegel, Peirce has overlooked key aspects of his predecessor's thought.

### 5.3 Thirdness

Thirdness is an important category for Peirce because it is the one category of being that provides knowledge of the law-like nature of reality. As noted, secondness provides a sense of 'something else', and it surprises the mind, but this limiting category only operates momentarily. It does not provide an on-going understanding of how reality operates at the level of cause and effect. The nominalist equivalent of Peircean thirdness is, of course, the conviction that the mind forms *interpretations* of observed 'constant conjunctions' (through Humean '*habit*') and that these provide understanding of the world. In contrast, Peirce argues that reality *itself* manifests the category of thirdness and that it is directly perceived. 'Thirds', it follows, are not merely human interpretations.

'Thirds' are, by definition, triadic. This point needs careful explanation. Peirce sees thirdness as a level of experience whereby the mind *perceives* relationships. A dyadic relationship is one that exists between two phenomena. A triadic relationship, on the other hand, is the experience of a dyadic relationship



observed from another perspective. In Peirce's synechistic model this can occur from any point in the web of relationships that constitute the universe. It is always possible, in this framework, to view a relationship from a third perspective. In a universe of such relationships, 'thirds' are always present in reality – either explicitly or implicitly.

The notion of the 'third' has important consequences in two contexts – in the social sphere and in the physical world. The social dimension will be considered first because many of Peirce's illustrations of thirdness are social ones. For example, in a discussion of the act of 'giving', Peirce talks as follows: "A presents C to B by any aggregate of dual relations between A and B, B and C, and C and A. A may enrich B, B may receive C, and A may part with C, and yet A need not necessarily give C to B. For that, it would be necessary that these three dual relations should not only co-exist, but be welded into one fact" (EP1: 252). Another example that Peirce gives is the action of a stone being thrown out of a window by a merchant. This stone kills his son. This action could be broken down into the action of the stone being thrown and the action of the son being killed, but Peirce rejects this atomised construal. Instead, if it is asserted that the 'merchant killed his son' a *single* observed relationship is established: "had it been aimed at him, the case would have been different; for then there would have been a relation of aiming which would have connected together the aimer, the thing aimed, and the object aimed at, in one fact" (EP1: 254). Thirdness, therefore, brings two actions together and the mind *perceives* them as one event; it resists the nominalist temptation to break the experience into separate elements. Critically, a 'third' does not, therefore, involve two events which are then re-assembled through interpretation. Instead, 'thirds' allow the intellect to experience relationships that exist in the world. And this is why Peirce can also talk of the "firstness of thirdness" (CP5: 113). Acts of 'giving' and 'murder' are, consequently, not the outcomes of cultural construction; they are directly experienced phenomena.

Importantly, for our later analysis of his semiotics, Peircean 'thirds' add an additional layer to his account of perception. These stages in perception can be outlined as follows:

1. Simple 'vague' perceptions. These are Peirce's 'firsts'.
2. Perceptions that we have categorised in some way. They involve the mind determining that something is one thing and not another. Secondness operates here because reality forces the mind to make such distinctions. Crucially, this stage involves experiencing something *as something*. This is the stage where Peirce's 'perceptual judgments' classify percepts.
3. Perceptions that involve the experience of *relationships* in the world. They do *not* involve interpretations of relationships between two atomised actions.

This means that ‘thirds’, critically, involve the experience of something *as something else*. This is distinct from level (2) where ‘perceptual judgments’ simply categorise things *as something*. It is this factor that raises Peircean ‘thirds’ above the level of ‘perceptual judgments’.

This triadic framework helps explain why a ‘third’ is an essential requirement for sign formation. Signs are precisely how the human mind experiences the world through a new lens; they allow it to experience something *as something else*. Peirce proposes, as a result, that all ‘genuine’ signs involve thirdness because they display this essential characteristic.

This feature of the Peircean ‘third’ also marks a critical departure from much of modern semiology. It is frequently maintained, and rightly so, that a sign ‘stands for something else’. Eco, for example, states that “according to the ancient definition, a sign is something that stands in the place of something else” (Eco 2018: 344). But it is important to understand exactly what this claim entails and how it differentiates Peirce from other semioticians. Peirce asserts that, in the case of ‘thirds’, the intellect *directly perceives something as something else*. But this is not the same claim as Eco’s assertion that a sign “stands in the place of something else”. In Eco’s model the sign, as a *known* ‘sign vehicle’, stands for something else because it is *interpreted* as such. This is quite different from Peirce’s claim that ‘thirds’ allow us to *perceive* something as something else. In Eco’s formulation, a sign is a known sense datum which then has its initial meaning changed through interpretation. This contrasts with Peirce who argues that something else is *directly perceived* in a ‘third’. Peirce has no need, as a result, for the language of interpretation, or, indeed, semiotic codes. Instead, new identities (in the form of interpretants) are encountered directly at a perceptual level. And, of course, Eco’s view that a known identity can ‘stand for something else’ stems from the familiar source. The core contention of ‘secondary dualism’ is that the intellect already knows the identity of its sense impressions before signification takes place. This is why Eco adopts a different account of the notion of ‘standing for something else’ compared with Peirce.<sup>24</sup>

---

**24** It is instructive to consider how Eco interprets Peirce’s three categories. The passage below shows how it is possible to misunderstand Peirce’s triadic model. Eco suggests (Eco 2018: 346):

I place my hand on the stove and burn myself: firstness is the moment at which I perceive pain, and I would perceive it even if I had sudden cramps in my intestines without any external agent causing them. Secondness is the moment at which, although still in a confused way, I identify the stove in front of me as the cause of the pain, something that is

Returning to our discussion of the social dimension, the question will arise as to the exact origin of a ‘third’. Surely, there might still be some social convention involved in the phenomenon of ‘giving’? How else, for example, could it become established? But the way in which a Peircean ‘third’ is created can be explained within his model of perception. An individual can, for example, observe certain similarities between acts of ‘passing a thing’ from one person to another and begin to categorise them as a distinct type of activity. As such, a ‘perceptual judgement’ classifies them as ‘acts of giving’ in a way that distinguishes them from other acts of ‘passing a thing’. This takes place at an *individual* level and does not involve any social agreement even though the subject matter of the ‘third’ is social.

The social constructivist may claim, in response to this Peircean position, that a combination of individual ‘perceptual judgements’ creates a cultural convention. But this claim should also be rejected. Just because individual perceptions are alike, this does not mean that they are socially constructed; this would equate, for example, to the claim that trees are ‘socially constructed’ because several people know what a tree looks like. Instead, the social constructivist needs to show that either the act of ‘giving’ is created at a social level, or that some (even tacit) social agreement exists. Peirce, however, has no requirement to invoke either of these assumptions; his account is firmly based on individual perceptual categorisations. Of course, there may well be disagreement about how different individuals classify an ‘act of giving’ and this may result in different notions of ‘giving’ being formed. But, as will be seen in due course, the way in which individuals negotiate what is included, or not included, in their concepts is a matter of how symbols are used.

As noted, Peircean ‘thirds’ also inform human understanding of the physical world. When the intellect observes two events which are juxtaposed, the direct perception of a ‘third’ means that it does not experience them as separate actions; they are seen as one event (EP2: 5):

---

opposing me. Thirdness is the moment at which I pass to the order of the symbolic and say (and think) ‘stove’, that is to say, “It is the stove that burned me”.

This account of Peirce’s three categories involves a series of mistakes. Firstness is reduced to a simple sense impression, or quality. Eco, it is true, accepts that he might be mistaken about the source of the sense impression, but this is not the same as saying that the sensation is indeterminate. Secondness is not construed by Eco as a limiting factor that determines the identity of the sensation. Instead, it is viewed as indicating the objective cause of the pain. Thirdness is construed as an interpretation.

He finds that one action is the means, or middle, for bringing about another result. This third state of mind is entirely different from the other two [firstness and secondness]. In the second there was only a sense of brute force; now there is a sense of government by a general rule. In Reaction [e.g., secondness] only two things are involved; but in government there is a third thing which is a means to an end. The very word *means* signifies something which is in the middle between two others.

In human experience, therefore, ‘thirds’ create knowledge of physical regularities and natural laws; they are not created by interpretation. As such, Peirce argues that the objects form ‘habits’ (CP1: 327–329). In a letter to Lady Welby, he states that “the third Universe consists of the co-being of whatever is in its Nature *necessitant*, that is, is a Habit, a law, or something expressible in a universal proposition” (EP2: 479).

‘Habits’, therefore, belong to objects (or identities); they are “general principles” which are “operative in nature” (EP2: 183) rather than mere constructions of the mind. For example, Peirce states that (EP2: 418):

If we now revert to the psychological assumption originally made, we shall see that it is already largely eliminated by the consideration that habit is by no means exclusively a mental fact. Empirically, we find that some plants take habits. The stream of water that wears a bed for itself is forming a habit. Every ditcher so thinks of it.

And, elsewhere, Peirce suggests that “belief is not a momentary mode of consciousness; it is a habit of mind essentially enduring for some time, and mostly (at least) unconscious; and like other habits, it is (until it meets with some surprise that begins its dissolution) perfectly self-satisfied. Doubt is of an altogether contrary genus. It is not a habit, but the privation of a habit” (EP2: 336–337). It is clear, therefore, that Peirce believes that doubt only arises in the mind when an expectation of reality (based on habit) is surprised by the category of secondness. When this occurs, the intellect feels the need to address what Peirce describes as an “irritation of doubt” (CP1: 114).

Returning to the philosophy of Hegel, it is also possible to discern parallels between Peirce’s ‘thirds’ and the ‘notions’ of Hegel with respect to the physical world. In particular, the Hegel insists that cause and effect should be comprehended as *one* event and as a unity. They are only separated into two events in the atomistic model of ‘secondary dualism’. As a result, Hegel critiques the conventional view of causation as follows (Hegel 2014: 181):

In the common acceptance of the causal relation the cause is finite, to such extent as its content is so (as is also the case with finite substance), and so far as cause and effect are conceived as two several independent existences: which they are, however, only when we leave the causal relation out of sight.

In other words, causation only appears to consist of separate events if the nominalist insists on their mistaken demand to *experience* a causal connection (e.g., a ‘sense impression’ of the connection itself). Hegel maintains, in contrast to this, that philosophers ought to conceive of cause and effect as two aspects of the same event. In this way, Hegel again foreshadows Peirce when he states that (Hegel 2014: 181):

But these two terms [cause and effect], if they are distinct, are also identical. Even in ordinary consciousness that identity may be found. We say that a cause is a cause, only when it has an effect, and *vice versa*. Both cause and effect are thus one and the same content: and the distinction between them is primarily only that the one lays down, and the other is laid down.

## 6 Mediation in Peirce: The structure of the sign

Peirce's three categories and the way they inform the mind's experience of reality have now been discussed. This chapter builds upon this platform by evaluating how the intellect begins to understand the world. In the Hegelian model this involves a mediating entity – the 'Essence'. It enables a putative identity to be posited which provides an intellectual locus for further development. In this chapter, discussion will focus on the Peircean equivalent of the Hegelian Essence and how it evolves. Critically, with Peircean semiotics, this mediating entity is the 'object' within his triadic sign.

Earlier, it was suggested that it is relatively easy to assume that Peirce's three categories mirror conventional distinctions between secondary qualities, primary qualities, and the inferred laws of nature. In this chapter there is a similar theoretical pitfall to be avoided. This is the mistake of assuming that the three elements of Peirce's triadic sign – the representamen, the object, and the interpretant – map onto structures familiar in 'secondary dualism'. These erroneous construals involve an object (behind the sign), a sense impression (which is transmitted from the object to the mind) and an interpretation (which is the intellect's understanding of the sense impression). If this conventional structure is imposed on Peircean semiotics, signs are reduced to little more than a special class of sense data and his sign theory would be little more than another incarnation of 'secondary dualism'. But fortunately this is not the case; Peirce, following Hegel, views the sign as involving a mediating entity – the object within the sign. As a result, this chapter will suggest that the structure of the Peircean sign reflects Hegel's triadic model of Being, Essence and Notion. There are, of course, some important differences between these two templates, but these should not mask their considerable similarities.

### 6.1 The representamen

The representamen is widely agreed to be the first element in the Peircean sign. However, not all perceptions are representamens. If a perception is not caught up in semiosis (which results in an interpretant) it will not become a representamen. Many perceptions are, in fact, involved in semiosis, but until this happens, they remain only potential representamens. Peirce states that (EP2: 273):

Namely, while no Representamen actually functions as such until it actually determines an Interpretant, yet it becomes a Representamen as soon as it is fully capable doing this;

and its Representative Quality is not necessarily dependent upon its ever actually determining an Interpretant, nor even upon its actually having an Object.

The factor which transforms a perception into a representamen is the recognition that it is something that has been seen before. Observed repetition is key here for Peirce (EP2: 203):

The mode of being of a representamen is such that it is capable of repetition . . . . A representamen which should have a unique embodiment, incapable of repetition, would not be a representamen, but a part of the very fact represented.

Peirce's emphasis on repetition suggests that, at the beginning of semiosis, an act of classification takes place. The perceiver, sub-consciously or not, feels that one perceptual experience is like another. Earlier, it was noted that this happens when a 'perceptual judgment' classifies a percept. A representamen, therefore, is a 'perceptual judgment' that has entered a sign (and determines an interpretant). This embeds Peirce's semiotics in his theory of perception.

Over the length of his career, Peirce is quite inconsistent when using the term 'representamen', so it is helpful to understand why Peirce sometimes adopts it.<sup>25</sup> Misleadingly, the term can suggest the kind of 'representation' found in 'secondary dualism'. This would mean that a representamen would simply be a 'copy' of an object 'behind' it. But 'perceptual judgments' are not like this; they are not copies of a 'noumenal' world. Instead, they are putative (and 'vague') classifications of perceptions. This is important, for if the representamen is intrinsically 'vague', then the task of sign action is to transform this indeterminacy into something more defined. And this begins to explain why Peirce describes signs as being *determined* by their objects. He uses this terminology precisely because the representamen is, by its very nature, *indeterminate*. And this view is, of course, founded in his relational account of perception.

To fail to understand this key characteristic of the representamen is to make a fundamental mistake about the nature of Peircean semiotics. His sign theory diverges from Saussure because he is concerned with the evolution that occurs from a 'vague' representamen to a more 'determinate' sign. This is never an issue for a semiologist such as Saussure because he is only concerned with linkages between *known* sign vehicles and their cultural meanings. In contrast, Peirce is following a different philosophical tradition; the Hegelian transition from 'Being' to 'Notion'. Many commentators, however, do not recognise this

---

<sup>25</sup> Deledalle (1992: 294) records Peirce's usage of the term 'representamen'. Peirce uses this terminology until 1873 and then drops it until 1895. He then re-adopts it from 1895 until 1903, when it is abandoned once again.

characteristic of the Peircean representamen. Jappy, for instance, maintains that it is simply the sign itself: (Jappy 2013: 13):

To conclude, then, a sign is a representamen, that is the first element in the triadic relation, but owing to the fact that it has an animate interpreter and therefore a mental interpretant, it is but one of many different species of representamens. Nevertheless, the reader should bear in mind that Peirce adopts the term ‘representamen’ in many of the quotations to come and should substitute the term ‘sign’ for the sake of simplicity.

Such a view simply transforms the representamen into a ‘sign vehicle’. Elsewhere, Hookway, highlighting that Peirce’s use of the term ‘representamen’ is often inconsistent, also suggests that the term be abandoned and that semioticians should speak in terms of ‘signs’ (Hookway 1985: 121). And Greenlee, to the same effect, maintains that semioticians should “dismiss the distinction between ‘sign’ and ‘representamen’ and speak only of signs” (Greenlee 1973: 46). Such proposals, however, result in several misunderstandings. For not only does the representamen quickly become a Saussurean ‘sign vehicle’, but Peirce’s critical insistence on the ‘vagueness’ of the representamen is also lost. And there are additional repercussions for the structure of the sign itself. Peirce believes that the sign is more than just the representamen – it is the *whole* triadic relationship formed by the unity of the representamen, object and interpretant. But by reducing the sign to just one element of this relationship (e.g., the representamen) commentators thus impose Saussurean thinking on Peirce’s sign structure.

But this mistake only begins to tell the full story of how Peirce’s sign structure is sometimes misconstrued. Problems of interpretation escalate further when consideration is given to the next element in Peirce’s sign: the ‘object’.

## 6.2 The ‘object’

There is, perhaps, no other term in Peircean sign theory that causes more confusion than his ‘object’ in the sign. Given Peirce’s clear rejection of dualism, the fact that Peirce uses this term at all when describing his sign structure seems somewhat paradoxical. Is he, after all, abandoning his anti-dualistic stance? Or is he using the term in a manner that somehow incorporates his rejection of dualism? At the centre of this debate lies the Hegelian concept of mediation and the question as to where the object is positioned within Peirce’s sign structure.

To begin our discussion, two accounts of his sign structure can be evaluated. They both seem to correspond, *prima facie*, with Peirce’s own position by

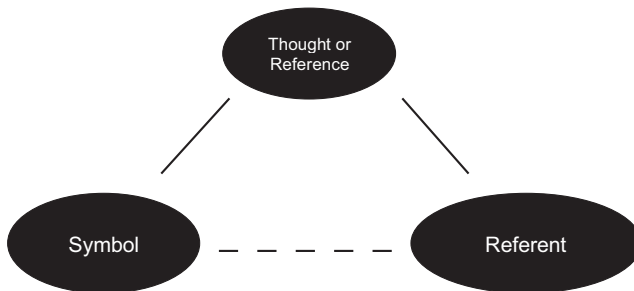


referencing his ‘triadic’ structure of the sign, but both accounts order the elements of his sign incorrectly.

The first of these accounts is to be found in Ogden and Richards’s work, *‘The Meaning of Meaning’* (Ogden and Richards: 1989). Written in 1923, Fisch sees this work as “the first book in any language from which it was possible to get a grasp of Peirce’s semeiotic at first hand, in his own terms” (Fisch 1986a: 345). As a result, their views were probably influential in subsequent interpretations of Peirce. In a footnote in their book, they state, possibly referring to Peirce himself (Ogden and Richards 1989: 9n):

It has seemed desirable, therefore, to introduce a technical term to stand for whatever we may be thinking of or referring to. ‘Object’ though this is its original use, has had an unfortunate history. The word ‘referent’, therefore, has been adopted, though its etymological form is open to question when considered in relation to other participial derivatives, such as agent or reagent.

Ogden and Richards thus recognise that there is some confusion relating to the term ‘object’ and they introduce the idea of the ‘referent’ in its place. Armed with this new term, they suggest a triadic structure as follows:

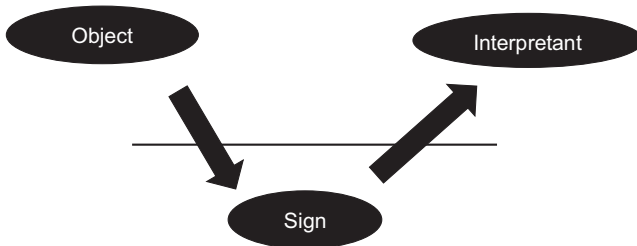


**Figure 4:** Ogden and Richards’s Triadic Model (Ogden and Richards 1989: 11).

In this model, ‘thought’ is positioned centrally and it ‘mediates’ between the symbol and the referent, creating a ‘bridge’ between them. The ‘inspecting mind’ effectively ‘translates’ one to the other (in either direction). The mediating role of the intellect is, consequently, interpretative in nature. It transforms an object into a symbol or, conversely, it encounters a symbol and interprets it by connecting it with a referent. The human mind is thus cast as an ‘encoder’ or ‘decoder’ of signs.

In the second work, Jappy’s *‘Introduction to Peircean Visual Semiotics’* (Jappy 2013), another triadic model is offered which also appears faithful to Peirce. Here, the sign is positioned between the object and the interpretant.

Jappy, therefore, follows a conventional cognitive model; the sign is construed as a ‘special’ kind of sense impression – transmitted from the object to the mind:



**Figure 5:** Jappy's Version of the Peircean Sign (Jappy 2013: 6).

It has already been noted that Jappy conflates the representamen with the sign – hence the absence of this term in his diagram. But Jappy also views the triadic sign as acting in a particular order: from object, to sign, to interpretant. This places the object at the beginning of the signifying chain – it acts as a source of the sign's ‘transmission’. As a result, the sign becomes a semiotic mechanism to obtain knowledge of a ‘noumenal’ object ‘behind’ it.

Elsewhere in the secondary literature, there are still other interpretations of Peirce's sign structure. Ma, for example, suggests that the *interpretant* should be placed in the middle of the sign (rather than as the concluding element) and this echoes the model of Ogden and Richards: “the mediatory effect of the interpretant in the sign-object relation is predicated on the meaning of a sign being tied to the cultural, historical milieu within which the sign is understood” (Ma 2014: 379).

It is clear, therefore, that there is considerable uncertainty regarding even the basic structure of Peirce's sign. But in the light of our earlier discussion of Hegel, it is now possible to suggest another way of understanding the Peircean ‘object’.

On an initial reading of Peirce, there seems to be ample evidence for interpretations such as Jappy's. For example, Peirce states: “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). But on further exploration, Peirce also says “I define a Sign as anything which is so determined by something else, called its

Object, and so determines an effect upon a person, which effect I call its Interpretant, that the *latter* is thereby *mediately* determined by the former. My insertion of 'upon a person' is a sop to Cerberus, because I despair of making my own broader conception understood [my italics]" (EP2: 478).

In the second passage, Peirce states that the object determines the sign, but he then goes on to say that the interpretant is *mediately* determined by the object. This suggests that the object is in the middle of the sign – in between the representamen and the interpretant. So why does Peirce also begin this passage by clearly stating that the 'sign' is determined by the object? The solution to this question resides in the fact that the object determines the meaning of the sign through its mediating role. From its position *within* the sign, the object determines the interpretant. In this account, therefore, the whole sign structure forms a triadic relationship that now places the 'object' in a mediating role.

Matters are made more complicated because the sign, as previously outlined in Figure 1, also has two dimensions. There is one dimension where the sign is initially formed, and a second where it is employed by the intellect to understand the world. In this second dimension, the sign is formed and can be used to reference objects in a conventional sense. But this should not detract from the fact that, in the first dimension, where the sign is still evolving, the object should be placed in a mediating position.

So, what does the object do, in Peirce's sign structure, if it is not transmitting the sign? Elsewhere, he states that "the sign stands for something, its **object**. It stands for that object, not in all respects, but in reference to a sort of idea, which I have sometimes called the **ground** of the representamen" (CP2: 228). As already noted, the representamen is, critically, a 'vague'. What Peirce is suggesting, therefore, is that, in its formative stages, the sign takes an element of a 'vague' representamen and makes it 'represent' the 'object' in some, but "not in all respects". The object thus represents certain aspects of a 'vague' representamen. It constitutes an initial hypothesis – a guess at an identity – which is a creation of the mind.

On this basis, the triadic relationships within the Peircean sign structure appear very differently. The intellect perceives a representamen as a 'vague' and the 'object' (within the sign) is a posited response to it. On this basis, a sign structure begins to form which leads to the creation of an interpretant and completes the triadic relationship. In this process the object does, indeed, *determine* the sign, but not in a causal sense. It does so, instead, because it serves to limit the initial vagueness of the representamen. The order between the three elements of the Peircean sign, in its formative stage, can thus be revised as follows: representamen, object, interpretant. Critically, in this new framework, the Peircean 'object' now becomes a *mediating* element within the sign.

As a result of this analysis, it is often useful to think about Peirce's 'object' as being an '*object of thought*'. It does not act as a source of signification; rather it is a mediating entity. As a result of this, and for the sake of clarity, the 'object' in the sign will often be described, in the rest of this essay, as an 'object of thought' – unless, of course, the intention is to mean an object in the conventional sense.

It is recognised that this view of the 'object', within the Peircean sign, will encounter criticism. But the argument, outlined above, is not based simply on a particular interpretation of Peirce. It is also important to explore usage of the term 'object' in the history of philosophy and to evaluate whether there is support for such a mediating role. Here substantial evidence can be found to support the argument that is being proposed.

### 6.3 Medieval, Kantian, and Hegelian accounts of the 'object'

As a nineteenth century philosopher, Peirce is immersed in the works of medieval writers such as Duns Scotus (Boler 1963), as well as Kant and Hegel. A wide spectrum of philosophers should thus be considered when evaluating how the term 'object' has been used historically and how this might have influenced Peirce. It can be shown, in fact, that the notion of the 'object' as a mediating cognitive entity has deep historical roots. This usage of the term has medieval origins, and it is still being used in this manner by Kant and Hegel in the eighteenth and nineteenth centuries. There are, as a result, several philosophical sources influencing Peirce's use of the term.

Perhaps the most effective way to understand Peirce's use of the term is to begin with Kant. In a famous passage in the '*Critique of Pure Reason*', Kant states (Kant 1998: 193–194):

It comes along with our nature that **intuition** can never be other than **sensible**, i.e., that it contains only the way in which we are affected by objects. The faculty for **thinking** of objects of sensible intuition, on the contrary, is the **understanding**. Neither of these properties is to be preferred to the other. Without sensibility no object would be given to us, and without understanding none would be thought. Thoughts without content are empty, intuitions without concepts are blind.

Here, Kant speaks of "thinking of objects of sensible intuition" and he also states that "without sensibility no object would be given to us, without understanding none would be thought". Kant is clearly using the term 'object' here in a different way to modern parlance; it is a mental entity that is employed in acts of comprehension. And he also claims that human knowledge is created by

a fusion of sensibility and understanding. He famously concludes that “thoughts without content are empty, intuitions without concepts are blind”. Synthetic knowledge cannot exist, Kant argues, without both elements being in place. Stern (1990: 20) confirms this Kantian perspective when he states that:

The world of objects, in space and time do not have a ‘transcendental’ reality, but rather must be grasped in a way that puts them *inside* our experience and allows them to be explained within the *conditions* of experience.

This Kantian usage confirms that the ‘object’ can be viewed as a mediating role that is neither exclusively extra-mental nor intra-mental. Rather, the ‘object’ synthesises both experiential and mental components. In this respect, it corresponds with the Peircean account of the ‘object’ outlined above. Peirce, in his own writings, often uses the term in this Kantian manner. Examples can be found at: CP1: 115; CP1: 132; CP2: 230; CP8: 15; CP3: 93; EP1: 7; EP1: 43; EP1: 46; and EP1: 91. On some occasions, however, Peirce could not make his own usage of the term ‘object’ any clearer (EP1: 90–91):

Indeed, what Kant called his Copernican step was precisely the passage from the nominalistic to the realistic view of reality. *It was the essence of his philosophy to regard the real object as determined by the mind.* That was nothing else than to consider every conception and intuition which enters necessarily into the experience of an object, and which is not transitory and accidental, as having objective validity. In short, it was to regard the reality as the normal *product of mental action*, and not as the incognizable cause of it [my italics].

Peirce asserts here that the “real object” is determined by the mind and that reality, as a result, is “the normal product of mental action”. In the same historical period as Kant, the Lithuanian philosopher Maimon also uses the term ‘object’ in the same manner. He explains the formation of what he calls ‘objects of thought’ as follows (Maimon [1790] 2010: 30):

An object of thought is a concept of an object produced by the understanding according to universal rules or conditions that therefore requires two parts: 1) **Matter** of thought, or something given (intuition) whereby these universal rules or conditions are applied to a determined object of thought (for they cannot [themselves] determine an object just because they are universal). 2) **Form of Thought**. i.e., these universal rules or conditions themselves without which the given can still be an object (of intuition) but not an object of thought: for **thought** is judging i.e., finding the universal in the particular or subsuming the particular under the universal.

A few decades later, Hegel also employs the term ‘object’ in the same manner: “The real nature of the object is brought to light in reflection; but it is no less true that this exertion of thought is *my* act. If this be so, the real nature is a *product* of *my* mind, in its character of thinking subject . . .” (Hegel 2014: 26).

And this Hegelian usage is fully explained by Inwood. He points out that Hegel, in fact, uses two different words for ‘object’ which are sometimes mistakenly translated as being equivalent to each other (Inwood 1992: 204):<sup>26</sup>

He [Hegel] stresses the etymology of *Gegenstand* more than that of *Objekt*, so that a *Gegenstand* is essentially and immediately an object of knowledge etc, whilst an *Objekt* is at least initially independent. A *Gegenstand* is an intentional object whilst an *Objekt* is a real object. . . . A *Gegenstand*, by contrast, may be the object of a simple form of consciousness, such as sense certainty, which is not yet a fully-fledged subject.

It is clear from this that, whilst Peirce does sometimes speak of conventional ‘objects’, he also uses the term ‘object’ in the same way that Hegel uses the word ‘*Gegenstand*’. Indeed, Inwood’s description of the latter as an “the object of a simple form of consciousness” echoes Peircean usage. And, critically, Hegel also maintains that a *Gegenstand* can change and grow. In his ‘*Phenomenology of Spirit*’, Hegel argues that when consciousness is confronted with reality, in an unexpected form, it is the ‘object of thought’ (the *Gegenstand*) that evolves (Hegel 1977: 54):

If the comparison shows that these two moments do not correspond to one another, it would seem that consciousness must alter its knowledge to make it conform to the object. But, in fact, in the alteration of the knowledge, the object alters for it too, for the knowledge that was present was essentially a knowledge of the object: as the knowledge changes, so too does the object, for it essentially belonged to this knowledge.

This analysis of Hegel’s object also corresponds to the two dimensions of the sign highlighted in Figure 1. The evolving object within the sign is the *Gegenstand*; it is the object in the sign which is constantly changing. In contrast, the *Objekt* (which stands, effectively, as an ultimate object of inquiry) is the object upon which the *Gegenstand* is always trying to converge (as the sign becomes more determinate). And this may well explain why Peirce uses the term ‘object’ in ways which confuse the modern reader.<sup>27</sup>

---

<sup>26</sup> Caygill (1995: 305), in his ‘*A Kant Dictionary*’, notes that this failure to distinguish *Gegenstand* from *Objekt* occurs in several translations of Kant. He observes, for example, that “Kant’s distinction between *Gegenstand* and *Objekt* is crucial to his transcendental philosophy, although never explicitly thematized and wholly obliterated in Kemp Smith’s translation of the *Critique of Pure Reason*”.

<sup>27</sup> This distinction between two kinds of ‘object’ can also be found in Deely. He distinguishes ‘objects’ and ‘things’ and argues that (Deely 2002: 136):

Now there is a great difference between an object and a thing, however confusedly the two notions are made to play in popular culture. For while the notion of thing is the notion of what is what it is regardless of whether it be known or not, the notion of object is

In the history of philosophy, this Kantian and Hegelian usage of the term 'object' can also be found in older philosophical sources. In the philosophy of Duns Scotus, for example, individual sense data are the 'objects' of the senses (e.g., colour is an 'object' of sight) (Lagerlund 2007). Thus, to understand an 'object', as it exists, it is necessary to have an additional, and mediating, 'object', which forms within the mind, and which allows an object to be comprehended. As Pasnau explains, it is this second 'object' that, in fact, renders something cognizable (Pasnau 2002: 289):

He [Scotus] gladly allows that the external object is present – that it has *real presence* – and that it is the efficient cause of the cognitive act. Still Scotus insists that this is not enough to account for cognition. Another kind of presence is needed, the presence of the object-as-cognized.

Elsewhere, Maritain also describes how the early modern philosopher, Poinset, uses the term 'object' (Maritain 1995: 416):

The concept is a *mediator*; by and in it the object is brought into the womb of the mind in the state of ultimate intellectual actuation. Thus, our intellect attains things only according as its concepts render them present to it. The manner of our understanding corresponds to the more-or-less complete, or the more-or-less defective way in which the thing is objectified in the concept.

And there are occasions when Peirce explicitly confirms that he is adopting this medieval usage. In a letter to Lady Welby, for example, he explains "I use the term 'object' in the sense in which *objectum* was first made a substantive early in the XIIIth century; and when I use the word without adding 'of' what I am speaking of the object, I mean anything that comes before thought or the mind in any usual sense" (SS: 69).

However, if this revised construal of the term 'object' is accepted, this still leaves an important question unanswered; what is the relationship between the representamen and the 'object of thought' in the sign? This raises the issue of what Peirce means by the verb 'determine'. As already discussed, it does not involve initiation or causation. So, what does Peirce mean by it?

---

hardly that. An object, to be an object, requires a relation to a knower, in and through which relation the object as apprehended exists as terminus. A sign warning of 'bridge out' may be a lie, but the thing in question, even in such a case, is no less objective than in the case where the sign warns of a 'true situation'.

A 'thing', for Deely, therefore, largely corresponds to the Hegelian *Objekt*, whilst Deely's 'object' equates to Hegel's *Gegenstand*.

## 6.4 The determination of the object

Peirce often employs the verb ‘determine’ in his definitions of the sign and several instances of this have already been cited. A common view, however, is that Peirce’s notion of ‘determination’ involves causation; an object determines a sign because it causes it to be transmitted to a perceiver. But the term, in fact, has a very specific meaning for Peirce which, again, is inherited from Hegel. Here is another example of his use of the term, along with an indication (significantly in German this time) of what ‘determination’ may mean (EP2: 492):

A Sign is a Cognizable that, on the one hand, is so determined (i.e., specialized, *bestimmt*) by something *other than itself*, called its Object . . . while, on the other hand, it so determines some actual or potential Mind, the determination whereof I term the Interpretant created by the Sign, that that Interpreting Mind is therein determined mediately by the Object.

It is noteworthy, here, that Peirce again places the ‘object’ in a mediating role; the “Interpreting Mind is therein determined mediately by the Object”. However, such passages can also be read as suggesting that ‘determined’ means caused. It has been noted that Jappy views the sign as being transmitted by the object, but there are many other instances of this construal. De Waal (2013: 87), for example, claims that the object “compels the sign”. Likewise, Hookway, seeking to explain the Peircean ‘object’, uses a particular example of a sign: “the stripped bark, here, is the sign; as its object we can take the deer or the fact that there have been deer nearby; and the interpretant is our thought that there are deer nearby” (Hookway 1985: 122). Here Hookway construes the deer as the cause of the bark being stripped. The word ‘determination’ suggests that he is discussing a cause of the sign.

Short, however, is more nuanced in his discussion of ‘determination’. He recognises the importance of the term to Peirce and devotes several pages to its meaning. He correctly identifies that “there is considerable trouble over how the relation of object to sign and of sign to interpretant is to be conceived” (Short 2007: 165). Crucially, he notes, in line with the passage above, that the word Peirce often uses is the German term ‘*bestimmen*’ (or ‘specialized’) and that its meaning is “to limit as in, ‘the water’s edge determines where your property ends’” (Short 2007: 167). He concludes, as a result, that “each object limits, or determines, what may be a sign of it, and each sign similarly determines what may be an interpretant of it”. His interpretation thus construes the notion of ‘determination’ as specifying the scope of the possible meanings of the sign. This is closer to a correct understanding of the term ‘determine’, but Short has still not made a connection to the indeterminateness of perception.



He still adheres to the view that an object causes a sign, but he believes that such an object ‘limits’ what possible sign this could be.

Given our earlier discussion of Peircean cognition, however, we are in a much better position to grasp Peirce’s intentions. Because he contends that human perception is intrinsically indeterminate, it follows that the ‘object’ now has a clear role to play in the structure of the sign. It encapsulates (as an evolving hypothesis) a more ‘determined’ identity compared with the original ‘vague’ representamen. In other words, the object *limits* the scope of the representamen. This process is never exhaustive enough to make a particular ‘object of thought’ completely determinate (an absolute representation of reality itself), but the activity still renders an object (of thought) more and more determinate. This is the activity that constitutes concept formation. As Peirce states “. . . thoughts are determinations of the mind” (CP4: 582).

It is important, however, to understand how this process takes place within the sign. Helpfully, one of Peirce’s editors corresponded with him on this subject. Peirce clarified his position in a letter entitled ‘*What is Meant by Determined*’. Peirce states, explicitly referencing Hegel, that (W 1982 Vol 2: 155–6):

Perhaps, therefore, I shall do well to state more fully than I did before, the manner in which I understand Hegel (in common with all other logicians) to use them. Possibly, the original signification of *bestimmt* was ‘settled by vote’; or it may have been ‘pitched to a key’. Thus, its origin was quite different from that of ‘determined’, yet I believe that as philosophical terms their equivalence is exact. In general, they mean ‘fixed to be *this* (or *thus*)’, in contradistinction to being this, that, or the other (or in some way or other)

The meaning of ‘determination’ is, therefore, linked, for Peirce, to the idea of ‘fixing’. When the representamen is ‘determined’ by the ‘object’, the latter *specifies*, or ‘limits’, the former and ‘fixes’ it as being one thing rather than another. This reflects the idea of ‘limiting’ highlighted by Short above. Elsewhere, Peirce also describes ‘determination’ as the activity of adding “depth” to a sign as it becomes more specified. As Liszka notes (Liszka 1996: 70):

Reasoning processes that are focused primarily on the increase or decrease in depth, respectively, are called *determination* and *depletion*. Determination is the process of reasoning by which we add greater and greater depth, more and more predicates to a particular subject (CP2: 422). A complete determination would involve a display of all the predicates that apply to some subject.

Therefore, as predicates are added to an ‘object of thought’, and it becomes more embedded in the world, it also becomes more ‘determined’. And how is it decided which predicates are included, or not included, in a specific concept? This is achieved through the action of secondness which either further determines an existing concept or forces the mind to create a new one. In respect of

the latter, Peirce asserts that, “a genus characterised by Reaction will, by determination of its essential character, split into two species, one a species where secondness is strong, the other a species where the secondness is weak, and the strong species will subdivide into two that will be similarly related, without any corresponding subdivision of the weak species” (CP5: 69).

In line with this argument, it is also useful to highlight that the notion of ‘determination’ was widespread in the eighteenth century in relation to concept formation. Maimon employs the same term and sees it as the mechanism which refines human concepts. He argues (2010: 21) that “sensibility thus provides the differentials to a determined consciousness; out of them, the imagination produces a finite (determined) object of intuition”. And we also find that Kant employs the same term in his *‘Critique of Pure Reason’*. For example, he argues that: “Every **concept**, in regard to what is not contained in it, is indeterminate, and stands under the principle of **determinability**” (Kant 1998: 553).

Peirce, therefore, when he uses the verb determine, is following a well-established philosophical tradition. In line with his predecessors, he views ‘determination’ as the mechanism which drives the evolution of a concept. It is, in fact, the very process which creates a ‘natural history of the sign’. And, critically, this semiotic activity takes place *within* the sign as an ‘object of thought’ is progressively limited by new empirical experiences.

To summarise, therefore, in the ‘speculative’ stage of Peircean sign formation, the mind creates an ‘object of thought’ as it hypothesises the existence of an identity within the perceptual continuum. This mediating entity, once formed, is where further development then takes place as it becomes steadily more determined. As with Hegel, the ‘object of thought’ starts its life as a hypothesis, and it remains provisional because reality can always force revisions of it. In this evolutionary activity, determinations previously included in the ‘object of thought’ are reinforced, further limited in their scope, or the impact of reality (via secondness) forces the mind to invoke a completely new ‘object of thought’. And, as a result, and *contra* Saussure, reality has a role in determining the content of a concept.

## 6.5 Immediate and dynamic objects

As an ‘object of thought’ becomes more determined, it becomes progressively more approximated to reality. In this activity of sign development, experiential inputs and the mental faculties combine to form a synthetic unity within the sign. As Andacht states “in experience the external and the internal come together through sign mediation in an evolving mixture of error and truth that only time, and self-criticism, are able to refine” (Andacht 2014: 15). This is why

Peirce calls himself an “objective idealist” (EP1: 293), and why, as highlighted above, he insists on the pivotal role of secondness. It is this category of being that leads him to reject the “absolute idealism” of Hegel (EP2: 177; Lane 2018: 70)

As an ‘object of thought’ becomes more determined it also develops more complexity. This means that it is possible to differentiate between an ‘object of thought’, as initially conceived, and when it has developed more specificity. In the later part of his career, Peirce makes a useful distinction between ‘objects of thought’ on this basis. An ‘immediate object’ is the one formed initially, whilst the ‘dynamic object’ is the ‘object of thought’ in its more developed complexity. Because experience can only provide part of the *relational* continuum of the Phaneron, it follows that a developing ‘object of thought’ can always be experienced from more perspectives. It is these which drive the evolving ‘dynamic object’.

This approach to human knowledge is, of course, one that has already been encountered. For Leibniz, human beings possess only a limited understanding of reality and their knowledge admits of degrees. Only God knows the entire relational web of the universe. In this context, Leibniz called these partial levels of understanding ‘nominal definitions’. These are, of course, always provisional and they can be revised in the light of new experience. In his *New Essays Concerning Human Understanding* Leibniz states that (Leibniz 1996: 299–300):

So, there is a kind of redundancy in our perceptions of sensible qualities as well as of sensible portions of matter: it consists in the fact that we have more than one notion of a single subject. Gold can be nominally defined in various ways – it can be called the heaviest body we have, the most malleable, a fusible body which resists cupellation and aquafortis, etc. Each of these marks is sound, and suffices for the recognition of gold: provisionally, at least, and in the present state of the bodies around us . . . . . So, one can say . . . . . that in matters where we have only the empiric’s kind of knowledge our definitions are all merely provisional.

This is the same distinction Peirce makes between ‘immediate’ and ‘dynamic’ objects. He distinguishes the ‘object of thought’, as it is partially known, from the ‘object of thought’ as it could be known in the long run. There is, of course, an implicit dualism here, but it is of very different kind to that of ‘secondary dualism’. The latter distinguishes between *known* sense data and the mind’s interpretation of them. Peirce’s distinction, in contrast, simply differentiates between partial and more complete understandings. And this difference is a direct consequence of his belief that the mind is immersed in a relational universe.

This Leibnizian framework also means, of course, that Peirce believes that signs have potential as well as actual meanings (EP2: 404). In a system in which entities are defined by their relationships with each other, it follows that

everything is potentially knowable from every other position in that system. In this respect, Peirce views the ‘immediate object’ as providing only a hint of the ‘dynamic’ object. In a letter to Lady Welby, he states (EP2: 480):

It is usual and proper to distinguish two Objects of a Sign, the Mediate without, and the Immediate within the Sign. Its Interpretant is all that the Sign conveys: acquaintance with its Object must be gained by collateral experience. The Mediate Object is the Object outside of the Sign; I call it the *Dynamoid* Object. The Sign must indicate it by a hint; and this hint, or its substance, is the *Immediate* Object.

By insisting that the developing (dynamic) object is ‘mediate’ (because it is mediated), Peirce emphasises that “acquaintance” with it “must be gained by collateral experience”. Such experience allows a closer understanding of what the ‘object of thought’ might be. But Peirce also insists that this ‘dynamic object’ does not equate to a ‘noumenal’ reality ‘behind’ the immediate object. In another letter, this time to James, he explains that he has deliberately not called the dynamic object the ‘real’ object (EP2: 498):

We must distinguish between the Immediate Object, – i.e., the Object as represented in the Sign, – and the Real (no, because perhaps the Object is altogether fictive, I must choose a different term; therefore:), say rather the Dynamical Object, which, from the nature of things, the Sign *cannot* express, which it can only *indicate* and leave the interpreter to find out by *collateral experience*.

The ‘dynamical object’ is thus the ‘object of thought’ in its relational richness. It is what a human mind would know if it were either omniscient, or if it could consider an object from all perspectives.<sup>28</sup> It is, of course, significant that Peirce is tempted to use the term “real” to describe the ‘dynamic’ object, but he decides to avoid this term because he knows that it will be interpreted dualistically. And in a letter to Lady Welby (EP2: 478), Peirce goes out of his way to state that, “By the way, the dynamical object does not mean something out of the mind. It means something forced upon the mind in perception but including more than perception reveals”.

Many commentators, however, do not fully appreciate Peirce’s desire to avoid this dualistic trap, and, falling into it themselves, conclude that he now acknowledges an ‘objective’ reality. Short, for instance, in an excellent analysis of the ‘dynamic’ object, still concludes that “the dynamic object is exactly that about which more can be learned. Therefore, it must be independent of our

---

<sup>28</sup> This point is also echoed by Deleuze, in his discussion of Leibniz (Deleuze 2006: 23), when he discusses perspectivism and relativity and speaks of “perspectivism as a truth of relativity (and not a relativity of what is true)”.

experience of it” (Short 2007: 199). Here Short slips from the correct view that the mind enjoys incomplete experience of the ‘dynamic’ object, to the more questionable conclusion that it must be “independent” of the mind. He does not recognise Peirce’s assumption that the intellect is immersed in a relational reality and enjoys, as a result, only partial understanding. Short consequently concludes that Peirce is forced back to a type of idealism and suggests that “we are back to idealism again, semiotic idealism specifically” (Short 2007: 191).

This reluctance to recognise that Peirce’s rejection of dualism is compatible with the ‘dynamic object’ also emerges with other commentators. Liszka, for example, clearly explains the ‘immediate’ object, but, picking up on the idea of ‘dynamism’, focuses on the idea of compulsion when discussing the ‘dynamic object’. This supports his ‘transmission’ interpretation of the sign: “the dynamic object can be considered as the dynamism, the machine that drives the semiotic process; it is what compels the sign” (Liszka 1996: 21). Indeed, Liszka goes on to illustrate this version of sign action with a diagram (Liszka 1996: 32) that places the ‘dynamic object’ at the beginning of the signification process.

Elsewhere, Deledalle also appears to misunderstand Peirce on this point. He correctly notes that knowledge of the ‘dynamic’ object is gained by “collateral experience” but argues that such knowledge cannot form “direct knowledge of the dynamical object” itself. Deledalle (2000: 46) concludes, in dualistic fashion, that:

We must, therefore, unless we fall back into idealism, admit the *existence* of an ‘external’ object: the dynamical object, which is ‘as it is regardless of any particular aspect of it, the Object in such relations as unlimited and final study would show it to be’ (CP8.183). What is known is thus the relations of an *existing* object independent of ourselves in the course of the semioses in which we are, it and ourselves, engaged.

Like Short, Deledalle has here conflated the fact that human understanding lacks complete knowledge of a ‘dynamical object’ with the idea that it is “independent of ourselves”. He concludes that this re-instates a form of ‘idealism’ – adopting a dualistic position. And Proni also asserts that Peirce’s ‘dynamical’ object must invoke Kant’s noumenal reality: “the Dynamical Object is that which puts the whole process in motion, standing behind the scenes, unreachable in its completeness (as in *Ding an Sich* in Kant), but effective in its empirical existence” (Proni 2015: 19). And finally, Greenlee also reaches the same conclusion, arguing that the ‘dynamical’ object has ‘noumenal’ characteristics: “the dynamical object is the represented thing, as it is in itself, *apart from relation to thought*, while that same thing, brought into relation to thought, is the ‘immediate’ object [my italics]” (Greenlee 1973: 66).

But the ‘dynamical’ object, immersed in the web of the universe, is simply the end point towards which an ‘object of thought’ is constantly evolving. It is not something “apart from relation to thought”. Commentators, therefore, fail to recognise Peirce’s rejection of dualism and conclude that his ‘dynamic’ object entails an implicit adherence to this doctrine. Peirce argues, in contrast, that the ‘object of thought’ grows in the sign, and as it does so, it encapsulates evolving human understanding.<sup>29</sup> As such, the ‘dynamic object’ is not set apart from thought. Indeed, it is precisely what connects the mind to the universe in which it is immersed.

## 6.6 The interpretant

The interpretant is the third element in the Peircean sign and, again, it is the subject of debate in the secondary literature – and not simply because of the term Peirce chose for it. Critically, it must be recognised that Peirce uses the term ‘interpretant’ precisely because he wants to ensure that his sign structure does not slip back into ‘secondary dualism’. For Peirce, the interpretant is not an ‘interpretation’ of a ‘sign vehicle’ observed on the ‘mirror’ of the mind. Instead, it acts in another way – as an ‘interpreter’ which *transforms* or *translates* an existing identity into a new identity. As a result, it is critical to understand Peirce’s distinction between the interpretation and transformation. As Skagesstad (2004: 244) observes:

It is essential to note that the interpretant of the sign is not identical to the interpreter; i.e., the individual mind interpreting the sign is not one of the three references that constitute signhood.

There are many commentators, however, who view the interpretant as either an interpretation of the sign, or the ‘effect’ on a perceiver that takes place through

---

<sup>29</sup> Stjernfelt concurs with this picture of how human knowledge grows, but instead of viewing it through the growth of an ‘object of thought’ (within the sign), he maintains that human knowledge grows through increasingly accurate iconic representations (Stjernfelt 2007: 88):

[The other reason is that] any icon fails to portray its object with final precision; this possibility is only asymptotically open for the community of researchers. This, of course, is Peirce’s answer by means of continuity to Kant’s *Ding-an-Sich*, it may be reached, but only in an indefinite future. But this implies that given any present icon, it is always in principle possible to find an even better icon which will then yield more evidence than the former. Thus, as a consequence of both these reasons, iconic evidence is always relative.

the interpretation of a sign. Both solutions result, however, in a *psychological* understanding of the interpretant which Peirce is keen to avoid. Peirce certainly discusses the effects of the interpretant when he distinguishes between the ‘emotional’, ‘energetic’ and ‘logical’ interpretants, but it is important to first establish the status of the interpretant itself.

It has already been observed that the representamen has an ‘indeterminate’ nature and that the role of the evolving ‘object of thought’ is to encapsulate greater specifications of it. At a certain point in semiosis, however, Peirce maintains that the interpretant transforms the emerging ‘object of thought’ into a ‘third’. It is at this point that a ‘genuine sign’ is formed which can be used to understand the world. This is possible because the interpretant creates a new identity. So how, exactly, does the interpretant achieve this task?

In his ‘*On a New List of Categories*’, Peirce suggests, in an extended passage with several examples, that the interpretant has, in fact, little to do with interpretation (EP1: 5):

Suppose we wish to compare the letters p and b. We may imagine one of them to be turned over on the line of writing as an axis, then laid upon the other, and finally to become transparent so that the other can be seen through it. In this way we shall form a new image which mediates between the images of the two letters, inasmuch as it represents one of them to be (when turned over) the likeness of the other.

Peirce thus asserts that a new and *mediating* image is created which “represents one of them to be the likeness of the other”. This image does not ‘interpret’ the first image; rather it states that there is an *equivalence* between the two. Peirce goes on to say in the same passage (EP1: 5):

Again, suppose we think of a murderer as being in relation to a murdered person: in this case we conceive the act of the murder, and in this conception, it is represented that corresponding to every murderer (as well as to every murder) there is a murdered person; and thus we resort again to a mediating representation which represents the relate as standing for a correlate with which the mediating representation is itself in relation. ... . By a further accumulation of instances, it would be found that every comparison requires, besides the related thing, the ground, and the correlate, also a *mediating representation which represents the relate to be a representation of the same correlate which this mediating representation itself represents*. Such a mediating representation may be termed an *interpretant*, because it fulfils the office of an interpreter, who says that a foreigner says the same thing which he himself says.

Here, again, Peirce suggests that a similar structure forms an interpretant. The key sentence refers to “a mediating representation which represents the relate to be a representation of the same correlate which this mediating representation itself represents”. And it is one that certainly needs unpacking. Peirce is asserting that the “mediating representation” (e.g., the interpretant) equates to

“the same correlate which this mediating representation itself represents”. In other words, the interpretant is the entity within the sign which asserts that a given representamen is the same as a given ‘object of thought’. This assertion of equivalence means that the perceived representamen is now raised to the level of a ‘third’. In the case of ‘murder’ the interpretant, therefore, asserts that the experience presented to a perceiver equates to the ‘object of thought’ (the notion of ‘murder’) and that these are now equivalent to each other. A ‘third’ (or ‘genuine sign’) is thus formed which says to the perceiver that he, or she, is now confronted with an ‘act of murder’. The interpretant thus *transforms*, or *translates*, the initial representamen and it insists, like the interpreter of a foreign language, that a particular experience is, in fact, the same identity as the ‘object of thought’ in the sign.

It may be objected, at this point, that the Peircean interpretant cannot represent a form of objective human knowledge. Simply asserting that an equivalence exists within the sign is not the same as ‘knowing’ something. However, it must be remembered that Peirce is not seeking to establish ‘objective’ knowledge through his semiotic system. His doctrine of ‘fallibilism’ means that the intellect cannot entertain certainty of this kind. All that it seeks to achieve is to ‘fix’ belief. Indeed, this feature suggests that the Peircean interpretant has a strong Hegelian character. It parallels the convergence of an ‘object of thought’ (a Hegelian *Gegenstand*) and a particular experience of the world (a Hegelian *Objekt*). It is this convergence, within the sign, that underpins an interpretant and furnishes the intellect with knowledge that an object will behave in a particular way. Earlier, this same phenomenon is also encountered in Schelling. In the very first paragraph of his ‘*System of Transcendental Idealism*’ he states that (Schelling 1800/1978: 5)

All knowledge is founded upon the coincidence of an objective with a subjective, – For we *know* only what is true; but truth is generally taken to consist in the coincidence of presentations with their objects.

It is this convergence of objects (of thought) with their “presentations” (e.g., sense data) that forms the foundation of truth for Schelling.

The underlying structure of the Peircean interpretant also has clear origins in Kant. The latter’s notion of the ‘transcendental schema’ displays the similar characteristics. For example, Kant (1998: 272) states that:

Now it is clear that there must be a third thing, which must stand in homogeneity with the category on the one hand and the appearance on the other and makes possible the application of the former to the latter. This mediating representation must be pure (without anything empirical) and yet **intellectual** on the one hand and **sensible** on the other. Such a representation is the **transcendental schema**.



This description of the ‘transcendental schema’ echoes the Peircean interpretant because it operates through a “homogeneity” existing *across* two categories. (e.g., the ‘sensible’ and the ‘intellectual’). It is this convergence which Peirce references in his discussion of the interpretant. This conclusion is also confirmed by Murphey (1993: 86) who argues that:

From this position it follows that the unity of the manifold is produced by the referring of the impressions to an object by the interpretant . . . . . Are we then to believe that the present in general is compared to a second substance which is also its object? This would require that there be already in consciousness a ‘substance’ possessing the same property as the given substance yet designated by it. This, I believe is what Peirce is saying.

Murphey therefore concludes that an interpretant is formed when the mind makes a comparison between ‘the present in general’ and a ‘second substance’ (e.g., an ‘object of thought’) which is ‘already in consciousness’.

And returning to Schelling, he also adopts, following Kant, a similar model with his ‘transcendental schema’. He states that (Schelling 1978:143):<sup>30</sup>

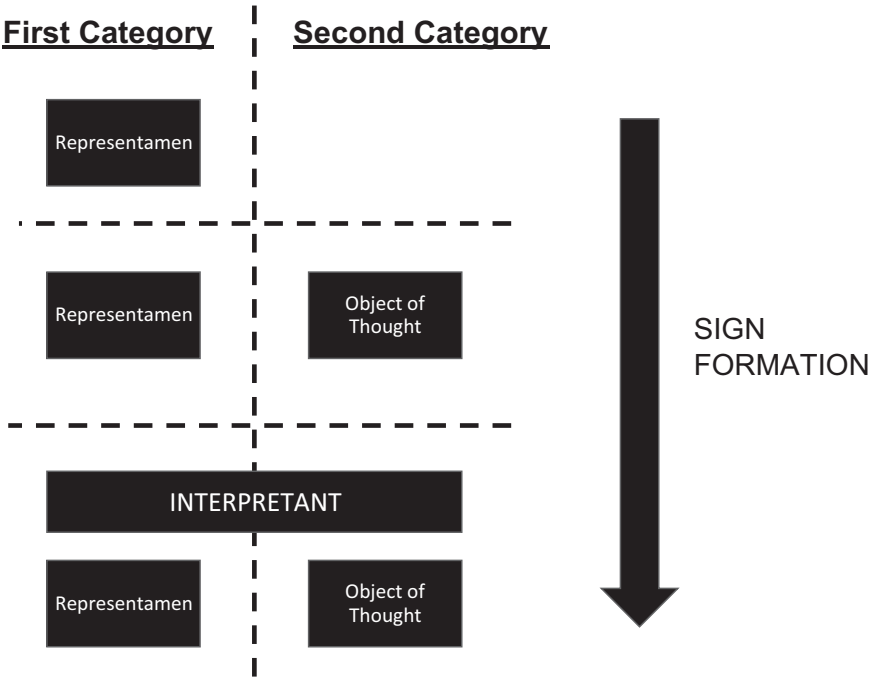
Hence the transcendental schema will have to be explained as that which mediates most fundamentally between inner and outer sense.

This account of the interpretant suggests, therefore, that the role of this third element of the Peircean sign is to assert an equivalence between the representamen and the evolving ‘object of thought’ in the sign. And this, importantly, also elucidates our earlier account of sublation. An interpretant, as highlighted above, asserts that a particular representamen represents a new (and ‘higher’) identity *whilst at the same time insisting that they are one and the same thing*. This, it is clear, is sublation in action. The purely experiential element in the sign (e.g., the representamen) is ‘preserved’ within the sign whilst, at the same time, it is also ‘lifted up’ to form a ‘third’. As such, the interpretant creates a new identity which now involves *seeing something as something else*. And this is precisely how Peirce construes a ‘third’. He is not suggesting, therefore, that a psychologically based interpretation takes place within his triadic sign, but rather that a new identity is created by the sign which now has existence (and meaning) in the world.

---

**30** Schelling, in fact, has two notions of the schema. The first of these is the ‘empirical schema’ which seems to equate to Peirce’s icon. Schelling states that “the empirical schema was explained as the sensorily intuited rule whereby an object can be brought forth empirically” (Schelling 1978: 143). He contrasts this with the transcendental schema which “combines the inner and outer sense” (Schelling 1978: 143).

The emergence of the interpretant can be outlined in diagrammatic terms (Figure 6). This diagram demonstrates that the interpretant establishes an equivalence between two categories – the ‘sensible’ and the ‘intellectual’. There are thus two categories involved in the creation of a genuine sign. The first of these is the representamen; the second the ‘object of thought’. The exact relationship between these two categories will be analysed in more detail, in chapter ten, when the inter-relationships between the three categories and the three elements of the sign are discussed. However, in Figure 6, the overall trajectory of the triadic sign can still be identified. Firstly, a simple representamen is formed; secondly, an ‘object of thought’ is created and developed, and, thirdly, the interpretant brings these together in a way which asserts that they are the *same* perceived identity, but now ‘raised’ to a higher level of meaning.



**Figure 6:** Forming the Interpretant in the Sign.

And to bring our discussion back to Hegel, we find that he describes the sign itself in the same terms. Hegel states that (Hegel 1830/1894: 458):

It is this unity (initiated by intelligence) of an independent representation with an intuition, the matter of the latter is, in the first instance, something accepted, somewhat

immediate or given (e.g., the colour of the cockade etc). But in the fusion of the two elements, the intuition does not count positively or as representing itself, but as representative of something else. It is an image, which has received as its soul and meaning an independent mental representation. This intuition is the Sign.

In this Hegelian account, the mind has an initial sensation of something “immediate or given”, but in forming a sign this element “does not count positively or as representing itself”. Instead, it becomes “representative of something else” – a sign. It remains an ‘intuition’, but the sense datum is elevated to represent new meaning.

What is of great significance for Peirce is the fact that the interpretant (like a Kantian schema) crosses over between two categories.<sup>31</sup> In doing so, it creates a new identity which *subsumes* the indexical components which were originally present in the emerging of ‘object of thought’. As such, it transforms their status; these indexical associations now become *signs* of the new (and higher) identity.

To observe how this works in practice, an example can be considered. This shows how a visual representamen, and its indexical associations, can be sublated into a higher identity. I can observe, for instance, some yellow cars in New York City, and I can initially form an ‘object of thought’ based on their similarity to each other (e.g., an icon). Over time, I can also form indexical associations with this icon (e.g., these yellow cars are found in Times Square, near Central Park etc). When I form a ‘third’, however, these indexical associations are given a new status – the yellow cars now become *signs* of New York. If I encounter them again, or see them in a film, they make me think of that city. A critical inversion has thus taken place within the concept. The indexical elements (which were once just *associative* in nature) are now *included* in the

---

<sup>31</sup> Crucially, it seems that it is the ability of the schema to subsume two different categories under the same heading that renders it ‘transcendental’ in nature. This view is confirmed in medieval uses of the term ‘transcendental’ which show that it entails an ability to operate *across* categories. This is clearly different from the modern meaning of the term which involves the notion of something being *beyond* the ‘phenomenal’ and belonging to the ‘noumenal’ world. In this modern construal the term ‘transcendental’, therefore, means the opposite of ‘empirical’, whilst for Kant (and probably also for Peirce) it involves the ability to work across heterogeneous categories. In an online article entitled ‘Medieval Theories of Transcendentals’, Wouter Goris and Jan Aertsen (2019), state that “since especially the Kantian understanding of the transcendental has been influenced for the modern mind, it must be emphasised at the outset that the medieval understanding is not opposed to the empirical, but to the categorical”. This construal of the transcendental as working *across* categories is confirmed by Deely who observes that “‘transcendental’ became the accepted medieval term for any notion that applies to more than one category, or that is verified in every category” (Deely 2010: 101).

newly formed ‘object of thought’. Maimon, a contemporary of Kant, in a passage interestingly entitled “*On Symbolic Cognition and Philosophical Language*”, captures this semiotic nexus when he states, rather elliptically, that (Maimon 2010: 142):

As a result, an object of symbolic cognition is: a form, or way, of thinking an object of intuition, that is itself treated as an object (but not of intuition).

This comment by Maimon explains, once more, how a ‘third’ is formed. An interpretant (an ‘object of symbolic cognition’) is a way “of thinking an objection of intuition” (e.g., a representamen) in a manner that treats it as a (mediating) object in its own right (e.g., a ‘third’ and not simply an intuition).

Earlier in this essay, it was also noted that Leibniz’s monads have a set of characteristics that differentiate them from modern accounts of identity. It was emphasised that monads do not separately exist and then *have* relationships with each other; rather they are identities which are *defined* by their relationships with each other. As such, Leibniz’s monadic identities *include* their indexical relationships with the world. This insight is now reflected in Peirce’s sign structure. The indexical associations that were present in the emerging ‘object of thought’ are now *subsumed* (via sublation) in the new identity of the interpretant. In this position they have a new status; they become the entailments of the newly formed identity. In many respects, therefore, the Peircean interpretant echoes the earlier unity of the Leibnizian monad. Sublation has allowed a fusion to take place in which the new identity includes its indices and they, in turn, become signs of the identity.

Later in his career, Peirce makes further distinctions between different types of interpretant. Firstly, he distinguishes between ‘immediate’, ‘dynamic’ and ‘final’ interpretants (CP8: 314). These reflect the *extent* to which an interpretant is known to the person forming the sign and these distinctions correspond to the immediate and dynamic objects discussed above. Secondly, Peirce also distinguishes three types of interpretant which reflect his experiential categories. The identity of the interpretant, can be experienced, therefore, as a ‘first’ (as an “emotional interpretant”), as a ‘second’ (as an “energetic interpretant” that acts upon the observer), or as a ‘third’ (as a “logical interpretant” with logical entailments) (CP5: 475–476). These distinctions may suggest that Peirce is advocating a psychological account of the interpretant. But, in fact, he is simply indicating how it is experienced through his three categories of being.

To summarise, the interpretant is the final element of Peirce’s sign and, as such, it completes the triadic relationship. When sign formation reaches the stage of the ‘third’ a new identity is established which exists in the world. It is still experienced as an immediate sense datum, but it has now acquired new

meaning. A clock is thus experienced *as* a clock and not as a complicated combination of pieces of metal. This ‘third’, or ‘genuine sign’, now contains logical entailments which inform us how it relates to the world.

And, as noted above, this triadic framework parallels Hegel’s account of concept formation as it ascends from Being to Essence to Notion. This dialectical activity also concludes with an act of sublation in which the immediate sensory experience is annulled (because it is no longer treated as it appears) and is yet ‘preserved’ and ‘lifted up’ to a higher level – as a new identity in the world. As such, Peirce’s parallel account of the interpretant explains the formation of a ‘genuine’ sign which now stands for something else.

## 7 Mediation in Vygotsky: ‘Word meaning’

In the previous chapter it was noted that one of the key barriers to understanding Peirce, and the extent of Hegel’s influence on him, is the fact that his notion of ‘mediation’ has been misconstrued by modern commentators. They tend to assume the Peircean ‘object’ is the source of the sign, and, in these circumstances, it ceases to be a mediating ‘object of thought’ evolving within the sign. In this interpretation, Peirce’s sign theory is reduced to a semiotic version of ‘secondary dualism’ and is reliant on interpretation as a mechanism for meaning creation.

But Vygotsky’s own account of concept formation must now be evaluated. Here similar mistakes can be found regarding the notion of mediation, and these also originate in a reluctance to recognise Hegel’s influence. Vygotsky’s account of mediation is frequently converted, as a result, into versions of social constructivism. Insufficient emphasis is given, therefore, to his notion of ‘word meaning’ and commentators highlight, instead, his focus on speech and words, viewing these as suitable platforms for their constructivist accounts. In contrast, for Vygotsky, ‘word meaning’ is a form of synthetic knowledge that closely aligns with Hegel. However, to begin with, it is important to outline how Vygotsky’s writings reflect Hegel’s dialectical account of concept formation.

### 7.1 Dialectical psychology

It is widely acknowledged that Vygotsky borrows from the dialecticism of Hegel (Van der Veer and Valsiner 1991: 26–27). However, Vygotsky’s own dialectical thought is often misunderstood in ways that undermine his intentions. In particular, there is a tendency, within the secondary literature, to shift the focus on dialecticism away from purely cognitive processes (which are more Hegelian in character), and towards a form of social dialecticism between individuals. In this context, Vygotsky’s dialecticism ceases to be an account of mental activity and becomes a description of social dynamics.

But Vygotsky does, in fact, adopt the Hegelian template at a cognitive level. Vygotsky describes his ‘third system’ as being distinct from the purely experiential inputs of ‘natural perception’. Vygotsky establishes this point, stating that (Vygotsky 1997b: 21):

The system of activity of the child is determined at each given step by both the degree of his organic development and the degree of his mastery of tools. The two different systems develop jointly, forming, in essence, a third system, a new system of a unique type.

In advocating this ‘third system’, Vygotsky proposes that psychologists adopt an approach which transcends the “animalization of child psychology” (Vygotsky and Luria 1994: 101) and he calls his own narrative “dialectical psychology” (Vygotsky 1997a: 114):

Dialectical psychology’s whole uniqueness precisely resides in the attempt to define the subject matter of its study in a completely novel way. This subject matter is the integral process of behaviour which is characterised by the fact that it has its mental and physiological side. [Dialectical] psychology studies it as a unitary and integral process and only in this tries to find a way out of the blind alley that was created.

Moreover, Vygotsky sees this ‘third system’ as explicitly rejecting dualism (Vygotsky 1997a: 112):

Dialectical psychology proceeds first of all from the unity of mental and physiological processes. Because for dialectical psychology mind is not, in the words of Spinoza, something that is situated outside nature or as a kingdom within a kingdom, it is part of nature itself, directly linked to the functions of the higher organised matter of our brain.

This account of Vygotsky’s dialectical psychology can be contrasted with modern commentaries. These often fail to recognise that dialecticism, for Vygotsky, involves this ‘third system’ and, instead, they assume that Vygotsky is concerned with social interactions between individuals. Ma, for example, talks of “how mind and culture shape each other dialectically” (Ma 2014: 377) and Lee construes Vygotsky’s dialecticism (C. Lee 2005: 254) as follows:

The use of language as both a socially communicative act and a medium for internal organisation of experience requires a give and take, a dialectical interaction among interlocutors. Wertsch calls this dialectical dialogue semiotic mediation.

Equally, Bidell, comparing Vygotsky with Piaget, views the dialecticism of Vygotsky in social terms: “Vygotsky presents a dialectical conception of relations between the personal and the social . . .” (Bidell 1992: 308). And this thinking is extended to include the idea of social participation. He argues that “Vygotskian scholars over the years have successfully introduced alternatives to individualism and interactionism by rebuilding developmental constructs and methods around the dialectical metaphor of participation” (Bidell 1992: 308).

Elsewhere, there are other commentators who conflate Hegelian dialectics with the dialectical materialism of Marx. The latter describes how the social dimension impacts on the consciousness of the individual. This can look very similar to Vygotsky’s account of how language creates concepts. B. Lee maintains, for example, discussing Vygotsky, that “as new levels of the organisation of productive forces and relations develop, new forms of consensus emerge. Particular economic social structures exist as moments in the dialectical interplay between

productive forces and relations" (B. Lee 1985: 71). These accounts, again, suggest a dialectical interplay between the social and the individual which results in concept formation. And this conclusion leads to the view that the Vygotskian notion of mediation is social.

However, Vygotsky is keen, in fact, to distance himself from the dialecticism of Marx. He considers Marx's philosophy as being unlike that of Hegel who is primarily concerned with cognition and how indeterminate perceptions ascend into more determinate concepts.<sup>32</sup> This is not the focus of Marx's dialecticism and Vygotsky, equally, is not focussing on the ways in which a society develops. At one point, in fact, Vygotsky categorically states that "the direct application of the theory of dialectical materialism to the problems of the natural science and in particular to the group of biological sciences or psychology is impossible, just as it is impossible to apply it directly to history and sociology" (Vygotsky 1997a: 330). And Vygotsky continues this argument by highlighting that several Hegel's terms are more relevant to his own work than those of Marx (Vygotsky 1997a 330):

It suffices to imagine Marx operating with the general principles and categories of dialectics, like quantity-quality, the triad, the universal connection, the knot [of contradictions], leap etc – without the abstract and historical categories of value, class, commodity, capital, interest, production forces, basis, superstructure etc.

In contrast to Marx, therefore, Vygotsky views his own dialecticism in cognitive terms. Vygotsky explains that there are "two lines of development" involved in this: "the elementary processes which are biological in origin" and the "higher psychological functions, of socio-cultural origin" (Vygotsky 1978: 46). The interaction of these dimensions drives a dialectical interplay which creates new concepts in his 'third system'. As will be discussed, these "lines of development" echo the interaction between Peirce's three categories of existence and his three elements of the sign. It is still true that there remains a role for the 'social' in Vygotsky's dialecticism (e.g., the role of speech), but the central point here is that the activity of mediation takes place *within* the mind of the child and *not* between the child and society. How this mediating activity takes place, and how it avoids an exclusively social account of meaning making, will

---

<sup>32</sup> Interestingly, Marx is also of the same opinion when he compares himself with Hegel. He contrasts the 'idealism' of Hegel with his more materialistic focus. In the preface to the second German edition of *Das Capital* (Marx and Engels 1996: 19) Marx writes "my dialectic is not only different from the Hegelian but is its direct opposite. To Hegel, the life-process of the human brain, i.e., the process of thinking, which under the name of 'the Idea', he even transforms into an independent subject, is the demiurges of the real world, and the real world is only the external, phenomenal form of 'the Idea'. With me, on the contrary, the ideal is nothing else than the material world reflected by the human mind and translated into forms of thought".



be the subject of later discussion. But the key issue, at this stage, is that Vygotskian dialecticism takes place within the mind of the child where mediating entities (e.g., ‘word meanings’) are formed.

Vygotsky’s mental, rather than social, interpretation of dialecticism also becomes clear in his differentiation of formal logic from ‘dialectical logic’. The origins of this distinction have already been encountered in our previous discussion of ‘secondary dualism’. This model asserts that the mind ‘atomises’ its perceptions and that it abstracts qualities from them. As a result, for Vygotsky, formal logic works along severely impoverished lines: “The path to generalization is thus a path which leads away from the riches of concrete reality toward the world of concepts, the kingdom of empty abstractions, far from living life and from living knowledge” (Vygotsky 1993: 204–205). In contrast, Vygotsky views ‘dialectical logic’ as follows (Vygotsky 1993: 204–205):

In dialectical logic, it is quite the opposite. A concept seems richer in content than it does in a presentation. Thus, the path to generalization is not a path formally divided into separate indications. Rather, it is an uncovering of the links of the relationship of a given matter with another. If the subject becomes truly intelligible, not through immediate experience, but in all the many links and relationships which define its place in the world and its connection to the rest of reality, then one’s understanding is a deeper, more real, truer, and more complete reflection than the envisaged one.

And, elsewhere, Vygotsky reaffirms his perspective by stating that, “the internal connection of things is disclosed with the help of thinking in concepts, for to develop a concept of some object means to disclose a series of connections and relations of that object with all the rest of reality, to include it in the complex system of phenomena” (Vygotsky 1998: 54). This last sentence is one which could have been written by Peirce himself – the Peircean sign evolves as it becomes more connected with the world, and this is precisely how the Vygotskian concept grows. And, as noted in Hegel’s account of the universal, the concept also becomes richer as it becomes more concrete. There are, of course, some differences in terminology between Vygotsky and Peirce: Vygotsky still retains some Hegelian terminology when he speaks of “dialectical logic” whilst Peirce, in contrast, adopts his own language of signs. But they share the same cognitive template inherited from Hegel.

## 7.2 Mediation in Vygotsky

Having evaluated the notion of mediation in Hegel and Peirce, consideration should now be given to the way in which it forms a cornerstone of Vygotsky’s thinking. As Wertsch correctly notes (Wertsch 1991), the concept of mediation

runs through Vygotsky's thought. But it is important to identify exactly what, in Vygotsky's view, is being mediated and where this mediation takes place.

Before analysing Vygotsky's own views, it is useful to explore the secondary literature on this topic. As already highlighted, these approaches often construe the term in ways contextualised by the late twentieth century. Several convergent themes come to a head here. Firstly, Vygotsky's work has been used by many commentators to support their claim that the learning process is social in nature. They have been eager to play down Piagetian interpretations of this activity which are more individualistic in tone. Secondly, Vygotsky's legacy has been invoked by commentators who, quite correctly, reject the outmoded 'transmission' model of learning. This views the learning process as a simple matter of instilling information in the child's mind. This clearly represents a flawed approach, and educationalists have borrowed the (apparently) constructivist aspects of Vygotsky's work to support their attacks upon it. Thirdly, in the former USSR, interpretations of Vygotsky have also resulted in an emphasis on meaning creation as a social activity. In the Kharkov school there was a desire, after Vygotsky's death, to create distance from him and to render his thought more politically acceptable. This resulted in a social dimension being inserted between stimulus and response mechanisms (S-R). For example (Kozulin 1996: 103) argues that:

Objects of human experience – and therefore objects in psychological experiments – are socially and culturally meaningful things and not just abstract stimuli. Activity then takes the place of the dash in the formulation 'S-R', turning it into a formula 'object-activity-subject', where both the object and subject are historically and culturally specific.

The Kharkov school thus sought to place social activity in a mediating role between an object and the mind. This resulted a re-interpretation of mediation. Meaning was redefined as being formed socially before being transferred to the internal sphere of the mind. Kozulin argues, consequently, that "as a general conclusion, the Kharkovites came to believe that the structure of cognitive processes more or less repeats the structure of external operations" (Kozulin 1996: 111). This, of course, still seemed faithful, in many ways, to the Vygotskian view that the 'social' plays a role in meaning creation, but the essence of Vygotsky's notion of mediation had now been abandoned.

There have, therefore, been considerable forces emphasising the social aspects of Vygotskian concept formation. And, indeed, such interpretations do seem to be supported by Vygotsky's own words. He states, for example, that "human learning presupposes a specific social nature and a process by which children grow into the intellectual life of those around them" (Vygotsky 1978: 88). Elsewhere, he argues, with Luria, that "the most important and basic of genetic laws, to which the study of higher psychological functions leads us,

reads that every symbolic activity of the child was once a social form of co-operation and preserves throughout its development, to its highest point, the social method of its functioning” (Vygotsky and Luria 1994: 138). But great care should be exercised in identifying the exact role of the social dimension in Vygotsky’s thought and how it relates to his notion of mediation.

In due course, a more Hegelian account of Vygotskian mediation will be proposed which locates it within the mind of the individual. It will be argued that this construal better reflects Vygotsky’s own position and draws him closer to Peirce. But before this, it is also useful to explore the different interpretations of Vygotskian ‘mediation’ in the secondary literature. These often seek to be differentiated from each other, but they all tend to be resolutely social in nature:

- Mediation as language, or communication
- Mediation as semiotics, or sign action
- Mediation as activity – including construction and negotiation
- Mediation as participation, or as a shared medium of ‘culture’

One of the more common interpretations of Vygotsky is that, by mediation, he means the action of words, or speech, on others. And there appear to be plenty of examples where Vygotsky confirms this view. After all, Vygotsky places the ‘word’ at the centre of his account of concept formation, and many commentators assert, quite rightly, that language is critical to him. Daniels, for example states that “he understood the development of higher functions in terms of mediated social, collaborative activity. Language is the most crucial of these ‘mediational means’” (Daniels 2016: 48). Meanwhile, Popkewitz (1998: 538) argues that “Vygotsky focused on language as the instrument which would transfer social experiences to the individual”. And Ma concurs that “language is particularly emphasised by Vygotsky, as it is vital in mediating between individuals and between the interpsychological and intrapsychological processes of the individual” (Ma 2014: 379).

This Vygotskian emphasis on language also extends to the claim that signs enable the child to gain a deeper understanding of the world. Again, there is much evidence for this claim in Vygotsky. He insists that signs, and symbols, form part of the development of the “higher psychological processes”. C. Lee argues, for example, that “through an on-going process of semiotic mediation occurring in specific cultural, social and historical contexts, the young learn the skills, values and knowledge of the community of which they are a part” (C. Lee 2005: 254). This interpretation suggests that Vygotskian mediation should be viewed as a semiotic medium where signs enable a child to develop its concepts. When discussing mediation, Daniels affirms this view, stating that “activity theory posits psychological development and thus psychological analysis as

grounded in practical cultural activities. The symbolic approach understands psychology in terms of collective symbols and concepts" (Daniels 2016: 76). As words are symbols, it is easy to see how this view of concept formation can become established.

The notion of social 'activity' is also important in other interpretations of Vygotsky. This notion has been used by commentators (and not just Soviet ones) to frame his concept of mediation. In these construals, the social activity of individuals creates meaning through their interaction. As Stetsenko observes (Stetsenko 2017: 148), this leads to a variety of interpretations: "It is no accident that many of the different units of analysis that have been chosen by scholars working in the Vygotskian tradition relate to acting and activity – mediated action (Wertsch), activity or event (Rogoff) activity system (Cole and Engestrom) and activity setting (Tharp and Gallimore)". Daniels also classifies these differing approaches and summarises them under various titles such as "situated learning" (Daniels 2016: 70), "distributed cognition" (Daniels 2016: 70), "activity theory" (Daniels 2016: 83) and "cultural historical activity theory (CHAT)" (Daniels 2016: 78). What is common to all these concepts is the contention, often attributed to Vygotsky himself, that meaning is created in the social dimension.

This approach to Vygotskian mediation, of course, creates its own theoretical problems. Advocates of these interpretations must explain how meaning is transferred from the social realm to the child. This is often called the problem of 'interiorization'. Bruner, himself an advocate of a 'cultural' approach, still questions whether Vygotsky provides a credible account of this process (Bruner 2001: 202). He challenges other Vygotskian scholars, saying: "Let me turn to another approach to mind and culture, one whose popularity rests, I sometimes despair, on obscuring many of the issues we have been discussing. It is the 'interiorization' position associated with Vygotsky and his followers". And he goes on to say (Bruner 2001: 203):

Indeed, interiorization theory obscures the vexing question of the commensurability of culture and mind by simply asserting that the latter 'interiorizes' the former. Vygotsky and Vygotskians have provided rich accounts of how the child's mind grows and how it uses 'external' forms, but they have had little to say about how this is accomplished.

As will be discussed in due course, Vygotsky does not, in fact, need to support such a theory of 'interiorisation'. Fundamentally, this is because Vygotskian meaning is *not* created in a social space, as is often suggested, but is created *within* the mind. Bruner, therefore, challenges Vygotsky on a theoretical position which he does not, in fact, hold. But many commentators have adopted the 'interiorisation' model to explain how Vygotskian meaning is created.

Elsewhere, Cole takes Vygotsky's concept of mediation and translates it into the slightly different claim that meanings exist in the 'medium' of culture. He proposes, in an article entitled '*Putting Culture in the Middle*' (Cole 1996: 220):

Culture as a system of artefacts and mind as the process of mediating behaviour through artefacts in relation to a supra-individual 'envelope' with respect to which object/environment, text/context are defined. This approach allows me to make use of the notion of culture as medium and of context as both that which surrounds and that weaves together.

As a proponent of the 'cultural-historical' approach, Cole also claims (Cole 1996: 108) that meaning exists in culture in the form of "artefact-mediated" objects. He suggests that "the initial premise of the cultural-historical school is that human psychological processes emerged simultaneously with a new form of behaviour in which humans modified material objects as a means of regulating their interactions with the world and one another". But Miller (2011: 206) attacks Cole on this point:

It appears that in Cole's account of the Russian cultural-historical school, Vygotsky's most distinctive and definitive ideas, such as the crucial role of signs as psychological tools and their functional difference from material tools, are simply ignored. Although he adopts the term *mediation* from Vygotsky, Cole does not explicitly point out that his concept of *artefact-mediated action* differs fundamentally from that of Vygotsky's sign mediation; that *artefact-mediated actions* refer to actions carried out by people in the world using artefacts to better achieve their purposes whereas sign mediation refers to operations that are carried out internally on psychological functions such as attention and memory.

Miller also criticises another interpretation of Vygotskian mediation; that proposed by Wertsch. The latter espouses a "sociocultural approach" (Wertsch 1991) and suggests that Vygotsky advocates a form of "semiotic mediation". In doing so, Wertsch proposes that Vygotsky advocates a form of "decontextualised rationality". Ironically, Wertsch reaches this conclusion because he sees signs (assumed to be Saussurean?) as being detached from reality. He argues that "by taking maximal advantage of the semiotic potential of decontextualization, it is possible to operate strictly within an abstract system, with all the attributes of mastery, conscious awareness, intellectualisation, and volition that Vygotsky associated with scientific concepts" (Wertsch 1996: 30).

Such an interpretation of "semiotic mediation" is, of course, contrary to Peirce's semiotics and his notion of secondness. But Wertsch still wants to locate mediation in the realm of culturally created signs and not in the mind of the child. Miller, again, criticises this approach and insists that Vygotskian mediation should focus, instead, on the notion of "word meaning" (Miller 2011: 233):

As we have seen, associating Vygotsky with the term 'mediated action' is like associating Freud with consciousness. It is a convenient half-truth that serves to obscure the fact that

Vygotsky's central concern is word meaning and the mediation of *mental* functions . . . . . Wertsch discusses Vygotsky's emphasis on verbal mediation without even mentioning his emphatic point that sign mediation results in internal changes in the person using signs as opposed to external changes in the world brought about by mediated actions involving the use of tools.

In other accounts, Lave and Wenger also suggest that meanings are mediated because they are 'negotiated' (Lave and Wenger 2005: 151):

A theory of social practice emphasises the relational interdependency of agent and world, activity, meaning cognition, learning, and knowing. It emphasises the inherently socially negotiated character of meaning and the interested, concerned character of thought and actions of persons-in-activity. This view also claims that learning, thinking, and knowing are relations among people in activity in, with, and arising from the socially and culturally structured world.

Finally, the cultural aspects of mediation also come to the fore in another position proposed by Cole. Referencing Bruner, he asserts that mediation is, in fact, a matter of "cultural psychology". He suggests "Jerome Bruner's vision of cultural psychology also emphasises the premise that human experience and action are shaped by our intentional states. It locates the emergence and functioning of psychological processes within the social-symbolically mediated everyday encounters of people in the lived events of their everyday lives" (Cole 1996: 103).

To summarise, therefore, commentators often conclude that Vygotsky proposes a social model of concept formation when he uses the term 'mediation'. Meaning, it is argued, is created by individuals in a social context (using a range of 'activity' verbs such as 'participating', 'negotiating', 'constructing' etc) and the outcome of this activity is then transferred to the mind of the child in an act of 'interiorisation'. An important aspect of these interpretations of Vygotsky is, of course, that they also appear to address one of Vygotsky's other main concerns; the problem of dualism. By making the individual part of a social whole, such philosophical problems seem to be resolved because the individual is now part of an all-encompassing social structure. The mediating nature of language, signs, or social activity thus appear to form a bridge across the Cartesian divide. The question, however, is whether this is what Vygotsky means by the term 'mediation'? Certainly, he gives a central role to 'speech' and 'words' in the activity of concept formation. But would he agree with claims that meaning is created primarily within the social realm?

Vygotsky's own account of mediation proposes that a sign has a profound effect on the internal structures of the child's mind. Vygotsky describes this action as follows (Vygotsky 1994: 61–62):

A sign or an auxiliary means of a cultural method thus forms a structural and functional centre, which determines the whole composition of the operation and the relative importance of each separate process. The inclusion in any process of a sign remodels the whole structure of psychological operations, just as the inclusion of a tool remodels the whole structure of a labour operation.

Two observations should be made here. Firstly, Vygotsky claims that mediated entities “form a structural and functional centre” for the child’s thinking and they remodel the “whole structure of psychological operations”. As Linask highlights, “the sign is not just a transference of reaction from one connection to another, but when used, it actively changes the structure of the entire process as a whole” (Linask 2019: 272). Secondly, Vygotsky notes that signs have similarities to human “tools”; they form new ways to think about the world. They are new mental structures created by the mind making its thinking more efficient. This view clearly echoes the notion of ‘thirds’ in Peirce. Of course, Vygotsky’s usage of the term ‘tools’ can be misleading because it can suggest external objects, or external signs, acting as forms of mediation. Words and symbols (or knots in string/notches on wood) can act as signs and, indeed, these types of mediation are mentioned by Vygotsky himself (Vygotsky and Luria 1994: 143). But it is also clear that Vygotskian signs are much more than this; they are mediating entities internal to the mind; they remodel the “whole structure of psychological operations”.

The location of Vygotskian mediation is fundamental to understanding his psychology. He argues that mediation takes place *within* the mind of the child and that concepts evolve there. He sometimes calls these ‘signs’, but this does not suggest that he always means visual, or verbal, signs experienced by the child. For Vygotsky, signs also operate internally (Vygotsky 1994: 207):

Investigations, which we are not going to discuss here, have shown that all higher psychological functions are united by one common characteristic, namely that they are mediated processes, i.e., that they incorporate in their structure, as the central and basic part of the process in general, the use of the sign as a basic means for directing and mastering the psychological processes.

Importantly, in *Thought and Language* (Vygotsky 2012: 5), Vygotsky calls these internal mediating entities ‘word meanings’ (*znachenie*). Valsiner and Van der Veer note that it is not until the later years of his career that Vygotsky began to employ this term more frequently (Valsiner and Van der Veer 2000: 375), but, when he does so, this concept emphasises the internal nature of mediation. It is, of course, possible to misunderstand ‘word meaning’ as simply suggesting the ‘meaning of a word’. But, in fact, Vygotsky is using the term in a way which echoes the mediating roles of Hegel’s Essences and Peirce’s ‘objects of thought’.



As such, 'word meanings' provide more evidence of the Hegelian influence on Vygotsky.

In contrast to the more 'social' accounts of Vygotsky explored above, it is noticeable how little emphasis is placed on the notion of 'word meaning' in the secondary literature. To take just two examples, Moll does not mention the term at all in '*L.S. Vygotsky and Education*' (Moll: 2014), and Daniels, in '*Vygotsky and Pedagogy*' makes just one mention of the term (Daniels 2016: 31). Vygotsky, however, makes it clear that 'word meaning' is the most appropriate unit of analysis for the dialectical psychologist to study. He argues that it is precisely in terms of these 'units' that conceptual development should be understood (Vygotsky 2012: 5):

Psychology, which aims at a study of complex holistic systems, must replace the method of analysis into elements with the method of analysis into units. What is the unit of verbal thought that is further unanalyzable and yet retains the properties of the whole? We believe that such a unit can be found in the internal aspect of the word, in *word meaning*.

'Word meanings', as mediating units, are formed dialectically and because they synthetically combine the experiential and the intellectual, they should not be broken down into their composite elements. In an analogy, Vygotsky points out that water behaves in quite different ways to oxygen and hydrogen in isolation; an understanding of water cannot be achieved by focusing on its components. Likewise, psychologists cannot grasp how a child thinks if they fail to recognise that a child's understanding occurs at the level of synthetic 'word meanings'.

Interestingly, Peirce also adopts a chemical analogy to explain how they work. He uses the compounds of carbon (EP2: 363) to make the same point. And it is with a certain inevitability that both thinkers are, in fact, echoing Hegel in this respect. In '*The Science of Logic*' Hegel describes the difference between flesh and the elements of "nitrogen, carbon, hydrogen" that constitute it. Hegel, moreover, overtly criticises the flawed "reasoning of an empirical psychologist when he analyses an action into the various aspects which it presents, and then sticks to these aspects in their separation" (Hegel 2014: 237). These analogies again indicate that Hegel, Peirce, and Vygotsky, reject the atomisation of sensory experience.<sup>33</sup> They believe that the human mind works at a higher level where synthetic meanings are formed, and this is why Vygotsky claims that psychologists should analyse human understanding in terms of 'word meanings'. He

---

<sup>33</sup> In fact, Aristotle made this philosophical point long before Hegel, Peirce, or Vygotsky. In his '*The Metaphysics*' (Aristotle 1998: 229), he discusses the nature of the syllable and says, "so the syllable is something in its own right, not just a heap of vowel and consonant but something different. Similarly, flesh is not just fire and earth, or hot and cold, but a different thing".



states, for example, that “meaning is the path from the thought to the word. Meaning is not the sum of all the psychological operations which stand behind the word. Meaning is something more specific – it is the internal structure of the sign operation. It is what is lying between the thought and the word. Meaning is not equal to the word, not equal to the thought” (Vygotsky 1997a: 133).

It is evident, therefore, that ‘word meanings’ are more than simple external ‘tools’ which provide ‘short cuts’ for human understanding. Rather, they are internal structures created between thought (inner experience) and word/speech (outer experience), and, as such, they form new conceptual units. Vygotsky even describes these synthetic unities as an “alloy” (Vygotsky 1978: 30) or as an “amalgam” (Vygotsky 2012: 225) to highlight this aspect. And, as Linask explains, “word meanings bear the mediating role in individual thinking of a person, as they transfer and organise elementary concrete experience. Thus, words are means for forming concepts, in which the sensory material is incorporated into conceptual structures” (Linask 2019: 291).

The exact empirical status of Vygotsky’s ‘word meanings’ needs, of course, to be treated with great care. Even if it is accepted that they are internal mental entities, it is still possible to construe them as a *correspondence* between the mind and the outside world. Such a construal, however, would have the effect of re-introducing the binary structures of ‘secondary dualism’. In this context, it is true that Vygotsky sometimes describes the ‘amalgam’ between thought and speech as a ‘bond’ and this does suggest that two separate elements are being held together. But Vygotsky is also keen to emphasise two other aspects of these. Firstly, the bonds evolve over time. Vygotsky (2012: 223–224) holds that “thought and word are not connected by a primary bond. A connection originates, changes, and grows in the course of the evolution of thinking and speech”. It follows from this that ‘word meanings’ are dynamic – a view that undermines any idea of simple correspondence. Secondly, and in line with this, Vygotsky also avoids any suggestion that ‘word meanings’ are established through what he terms an ‘associative’ bond. It has already been noted that Vygotsky rejects ‘associationism’ and that he prefers a dialectical account of concept formation. It follows from this that the meaning of a concept is not formed through a direct correspondence with the external world.

This rejection of associationism also has implications for the way in which ‘word meanings’ evolve. In the theoretical template of associationism, the criterion used for establishing the meaning of a word is always the *consistency* of a particular word’s usage. This factor often leads to the view that meanings are immutable – if only because Humean ‘constant conjunction’ is used to establish how meanings are established. In contrast, Vygotsky avoids this conclusion; he

argues that meanings evolve dialectically within the mind of the child as new experiences are encountered.

The way in which 'word meanings' evolve in the mind is also of significance in relation to Bruner's criticism that Vygotsky adopts a theory of 'interiorisation'. Indeed, Vygotsky emphasises, in the following passage, that 'word meanings' are *not* conveyed to a child in this way. Instead, with Luria, he insists that 'word meanings' derive from internal "qualitative transformations" that take place within the mind of the child (Vygotsky and Luria: 1994: 147):

This means that they are not simply invented or passed down by adults, but rather arise from something that is originally not a sign operation and that becomes one only after a series of qualitative transformations, each of which conditions the next stage and is itself conditioned by the preceding one and thus links them like stages of an integral process, historical in nature. In this respect the higher psychological functions are no exception to the general rule and do not differ from other elementary processes. *They, too, are subject to the fundamental law of development which knows no exceptions.* They appear in the child's general process of psychological development not as something introduced from without or from within, but as the natural result of this same process.

Linked to this activity is the role of speech itself. In line with Vygotsky's rejection of dualism, he criticises his contemporary psychologists who reduce speech to a mere external expression of internal thoughts. If speech is construed in this way, Vygotsky argues that the true role of language in child development cannot be understood. He points out that "some authors consider speech and reasoning as entirely different processes, one of which serves as the expression and the outer clothing of the other" (Vygotsky 1994: 68). Significantly, Vygotsky includes Piaget in this criticism. In this context, Vygotsky describes the thoughts which emerge at the biological level as 'spontaneous' concepts, whilst defining those that speech helps engender as 'non-spontaneous' concepts. In this distinction Vygotsky agrees with Piaget, but he goes on to argue that Piaget makes the mistake of concluding that these two sets of concepts remain dualistically apart. Vygotsky states that "Piaget is only able to differentiate between the spontaneous and the non-spontaneous concepts, but he is unable to see the facts which unite them into a single system of concepts formed during the course of a child's mental development. He only sees the gap, not the connection" (Vygotsky 1994: 361).

In addition, Vygotsky criticises the widespread assumption that human thought comes first, and that speech is a secondary manifestation of it. Vygotsky reverses this process and maintains that speech also has a critical role in *informing* thought. At one level, this seems to be non-controversial – of course, the content of received speech influences an individual. But Vygotsky is making the far stronger claim that human concepts *themselves* are formed using the words of others. He states this when he asserts that "just as a mold gives shape

to a substance, words can shape an activity into a structure” (Vygotsky 1978: 28). To support this view, Vygotsky claims that he has identified the role of received speech in his experiments using “double stimulation” (Vygotsky and Luria 1994: 159). He argues that the introduction of a second level of stimulation (through an adult’s words) helps a child form new concepts in problem-solving. This view can suggest that, after all, Vygotsky accepts that ‘word meanings’ come from external social sources. But a child’s concepts, whilst being informed by these external inputs, are still the outcome of their internal dialectical processes.

This analysis of ‘word meanings’ also has implications for the precise role of symbols in Vygotsky’s thought. For Peirce, words (as symbols) only emerge in the final stages of sign formation. In contrast to this, Vygotsky proposes that the words of others play a role at a much earlier stage. The symbols of others, therefore, help a child form ‘word meanings’ by providing inputs for them (Vygotsky 1994: 130–131):

The system of symbols reconstructs the whole psychological process, and the speaking child masters its movement on a totally new foundation . . . Movement detaches itself from direct perception and submits to symbolic functions included in the reactive act, thus breaking with the natural history of behaviour and turning a new page: that of the higher intellectual activity of man.

But it is important to emphasise here that Vygotsky is not suggesting that the symbols of others are the *source* of a child’s concepts. Instead, he argues that their role is *partial*. He maintains that a child’s conceptual development benefits from the input of others, but only if the child already possesses pre-existing ‘natural’, or ‘spontaneous’, concepts. The words of others certainly aid concept development, but external input alone will not result in new concepts. As Vygotsky clearly states, the activity of teaching mere words to children, without pre-existing concepts, is what he calls a “fruitless” cause (Vygotsky 2012: 159):

Practical experience also shows that direct teaching of concepts is impossible and fruitless. A teacher who tries to do this usually accomplishes nothing but empty verbalism, a parrot-like repetition of words by the child, simulating knowledge of the corresponding concepts but actually covering up a vacuum.

Overall, therefore, Vygotsky’s ‘word meanings’ exhibit many of the same characteristics which have been encountered in Hegel and Peirce. They are formed within the mind as mediating entities and they are synthetic in nature. They combine two elements in a conceptual ‘amalgam’ which allows the child to create new concepts and, as a result, new ways of understanding the world. In the hands of Hegel and Peirce such mediating entities are established as hypothetical

identities (e.g., Essences, or 'objects of thought') and they are fashioned by either Hegelian dialecticism, or by Peircean secondness.

In the case of Vygotsky, however, the conceptual 'alloy' formed by 'word meanings' has slightly different sources. It comprises the 'natural', or 'spontaneous' perceptions of the child and the external 'words' of others. These come together to create a child's higher concepts in a conceptual 'amalgam'. In chapter twelve, Vygotsky's analysis of concept formation will be explored in more detail, and it will become evident how Hegel informs his dialectical process. But discussion must now return to Peirce to elucidate how his three elements of the sign combine with his three categories to form his own semiotic account of concept formation.

---

## **Part Three: Concept formation in Peirce and Vygotsky**



## 8 Peirce: The classification of signs and the first trichotomy

In the first two sections of this essay, consideration has been given to how the Hegelian template of concept formation contrasts with that of ‘secondary dualism’. It has been noted that these two distinct approaches are founded in their respective construals of perception. It has also been emphasised that the models of Hegel and Peirce involve an evolution from ‘vague’ to more determinate perceptions. And, in this context, Peirce’s understanding of the three elements in the sign and his three categories has been explored. What has not been considered, however, is how Peirce explains the interaction of his three categories with the three elements of the sign. This is important, because it is through this process of mediation that Peirce explains the details of concept formation. As noted earlier, Peirce maintains that this activity represents an alternative to the dialecticism of Hegel. It is important, therefore, to understand how Peirce views this process beginning with perceptual vagues and culminating in the formation of symbols, propositions, and arguments.

The focus of this chapter is primarily on Peirce’s classification of signs. This framework is critical because it elucidates how Peirce explains the combination of sign types. These interactions should be construed, therefore, as the staging posts in the ‘speculative’ process highlighted in Figure 1. Deacon agrees on this key point, suggesting that “these taxonomic hierarchies describe the cognitive stages of sign interpretation” (Deacon 2014: 95). He is acutely aware, however, that this claim is “an almost heretical departure from contemporary Peircean scholarship” (Deacon 2014: 95). The latter, he observes, tends to construe Peirce’s signs “synchronically and independently” (Deacon 2014: 95) rather than as part of a gradual process of sign combination.<sup>34</sup> But Deacon is correct; if it is assumed that Peirce’s classification amounts to a taxonomy of

---

<sup>34</sup> Deacon comes close to advocating the position outlined in this essay. He maintains that Peirce’s sign classification should be construed as a cumulative process of signs combining and building upon each other. Deacon also confirms, in line with this essay, that Peirce’s sign classification should be read in two ways – as an activity of semiosis as signs combine (“sign development”) or, conversely, as “sign analysis” (Deacon 2014: 98). However, Deacon does not recognise several of Peirce’s key insights. He still uses the language of the ‘sign vehicle’ and this relates to the fact that he does not mention the indeterminate nature of the representamen. However, he certainly recognises that its nature changes through the action of the interpretant: “although the presence of a representamen precedes the generation of its interpretant in time, the semiotic function of this representamen is assigned by this process of interpretant generation. In

independent sign types, or simply facilitates an identification of the components of more complex signs, then understanding of its true purpose will be lost – to outline the formation and growth of human concepts.

In this chapter, therefore, an overview will be conducted of Peirce's sign classification. Then the first trichotomy in this classification will be analysed. The philosophical task of understanding the second trichotomy, consisting of icons, indices, and symbols, will be addressed in chapters nine and ten. This second trichotomy demands more attention because it is where *empirical* concept formation takes place, and it is also where misinterpretations of Peirce have been the most profound. These two reasons are, of course, inter-related. If Peirce is read with the assumption that the identity of a 'sign vehicle' is already known, then it is difficult to make sense of his classification of signs. Its very purpose – to uncover how human conceptual meaning is formed – will be redundant because meaning is already assumed to exist in the supposed identity of the sign vehicle.

## 8.1 Peirce's classification of signs

Peirce's sign classification is notorious for its complexity and, in the words of Short (1982: 285), can become a "journey into darkest semiotica". Hookway, likewise, describes Peirce's classification as "bewildering" (1985: 125). Other commentators have tended to simply circumvent discussion of it. Deely, for example, whilst asserting that his own semiotic approach is close to that of Peirce, tends to marginalise the role of his sign classification.

To begin our analysis of Peirce's classification, however, it is essential to recognise that his sign structure is triadic in two senses. It involves three categories combining with three elements of the sign. This leads to nine sign types. On the one hand, there are three experiential categories based on potentiality, actuality, and necessity – firstness, secondness and thirdness. On the other, there are three elements of the sign – the representamen, the object and the interpretant. It is critical to understand how these two sets of triads interrelate with each other.<sup>35</sup> As Stjernfelt correctly highlights the resulting nine sign types

---

this respect, the semiotic function of a given representamen only comes into existence after the process of interpretant generation is completed" (Deacon 2014: 99–100).

<sup>35</sup> Dewey, in a paper called "*Kant and the Philosophic Method*" (1884), included in Goetzmann's "*American Hegelians*" (Goetzmann 1973: 150), describes the operation of Hegel's categories in a way that closely echoes Peirce. He states:



are “nested so that the more complicated signs contain, embed or involve specimens of the simpler signs” (Stjernfelt: 2014: 4). The following outline of Peirce's classification is found in several secondary sources (e.g., Nöth 1995: 45; Olteanu 2015: 73):

	Element of the Sign: Representamen	Element of the Sign: Object	Element of the Sign: Interpretant
Category of Firstness (Monadic)	Qualisign	Icon	Rheme/Term
Category of Secondness (Dyadic)	Sinsign	Index	Dicent Sign /Dicisign /Proposition
Category of Thirdness (Triadic)	Legisign	Symbol	Argument

**Figure 7:** Peirce's Classification of Sign Types.

It is noteworthy that Peirce's classification positions the ‘object’ in the middle column – confirming its mediating role in the structure of sign. But, as it stands, this version of the classification does not include, along the horizontal axis, any verb to specify the exact relationship between the three elements of the sign and the three categories. This is because the way these elements interrelate is the focus of this chapter. It must be acknowledged, however, that some commentators do not even agree with this basic layout of the classification (Sheriff 1994: 41; Deacon 2014: 98; Olteanu 2015: 73; Feibleman 1969: 93). Feibleman, for example, places three different terms along the horizontal axis – Sign, Ground and Object – thereby limiting the scope of the term ‘sign’ to one column and confusing matters by placing ‘object’ in the column that should be occupied by the term ‘interpretant’. Elsewhere, Deacon describes the first column as consisting of types of

---

Hence the method must examine the categories without any reference to subjective or objective existences; or, to speak properly, since we now see that there are no purely subjective or objective existences, without any relation to things and thoughts as two distinct spheres. The antithesis between them is not to be blinked out of sight, but it must be treated as one which exists within Reason and not one with one term in and the other out. The categories which, for the individual, determine the nature of the object, and those which state how the object is brought into the subjective form of cognition, must be deduced from Reason alone.”

This description, by Dewey, parallels Peirce's account of how the three categories interact with each other to “determine the nature of the object”, and how they bring it “into the subjective form of cognition” as a mediating object.

‘sign vehicle’ (Deacon 2014: 98). And both Sheriff and Olteanu place the categories of firstness, secondness and thirdness along the horizontal axis *as well as* in the vertical one. This creates problems of its own. Firstly, it is now difficult to show how each element of the sign interacts with the categories (although Olteanu does discuss this). Secondly, it makes it much harder to follow the transition from ‘vagues’, in the first trichotomy, to specific statements about the world in the third trichotomy.

In trying to understand the various interpretations of Peirce’s classification, it is important to focus on the fact that Peirce wants to demonstrate how the two axes interact with each other. As such, and referencing our previous analysis, it is now possible to introduce some detail into Peirce’s classification:

	Representamen	Object	Interpretant
Category of Firstness (Monadic)	<b>Qualisign</b> A monadic form of firstness	<b>Icon</b> A monadic form of Secondness	<b>Rheme</b> A monadic form of Thirdness
Category of Secondness (Dyadic)	<b>Sinsign</b> A firstness of a dyad	<b>Index</b> A dyadic form of Secondness	<b>Dicent/Dicisign</b> A dyadic form of Thirdness
Category of Thirdness (Triadic)	<b>Legisign</b> A firstness of a triad	<b>Symbol</b> A triadic form of Secondness	<b>Argument</b> A triadic form of Thirdness

Figure 8: The Elements of the Sign as Experienced through each Category.

At this stage, this revision seems abstract, but it begins to reflect what Peirce means when he talks, for example, about a “first of a first” (e.g., CP1: 543). However, utilising learnings from our earlier analysis, it is possible to redefine the ‘object’ in the classification as an ‘object of thought’. The effect of this is outlined below:

	Representamen	‘Object of Thought’	Interpretant
Category of Firstness (Monadic)	A vague, or indeterminate, quality	A vague, or indeterminate, object (of thought)	The possibility of a relational identity
Category of Secondness (Dyadic)	The actuality of a quality	The actuality of an object (of thought)	The actuality of a relational identity
Category of Thirdness (Triadic)	A quality as part of a ‘system’ or ‘law’	An object (of thought) as part of a ‘system’ or law	A relational identity in a system of identities

Figure 9: Inserting ‘Objects of Thought’ in Peirce’s Sign Classification.

It must be admitted, however, that this revised formulation remains rather difficult to comprehend. But it is possible to demonstrate how it works in practice by using an example of how a single concept develops in this combination of sign types. This shows how the *systematic* growth of a concept takes place in Peirce's model. Using the example of 'rain', it can be demonstrated how such a concept develops from an initial 'vague' sensation to an element in a system of knowledge.

	Representamen	'Object of Thought'	Interpretant
Category of Firstness (Monadic)	Simply feeling a vague sensation (which turns out later to be wetness).	An 'hypothesis' that I am experiencing 'rain' (e.g., a putative 'object of thought' is formed based on likeness).	'Rain' as a possible term in a proposition.
Category of Secondness (Dyadic)	Feeling the actual (but vague) sensation on my skin (e.g., a dyadic relationship).	Whilst hypothesising that this might be rain, I realise that I am getting wet (e.g., an index of the concept is created).	A proposition about 'rain'.
Category of Thirdness (Triadic)	Sensing that this (vague) sensation fits into a pattern I have experienced before.	I know this is 'rain' (a specific empirical identity), which I can now encapsulate in a symbol.	An argument about rain and the effects of rain.

**Figure 10:** Developing the Concept of 'Rain' in Peirce's Sign Classification.

This revision of Peirce's classification outlines, in multiple stages, the evolution of a particular concept (e.g., a 'natural history of the sign' (Vygotsky 1978: 45)), from an experiential 'vague' through to its emergence within a system of other concepts. Fundamentally, this account of Peirce's sign classification describes a dynamic process between the three elements of the sign and his three categories. Some commentators<sup>36</sup> overlook this dynamism, but, as Muller correctly insists,

---

<sup>36</sup> For example, in '*Purely Objective Reality*', Deely (2009) gives relatively little attention to Peirce's evolution of signs from qualisigns to arguments. These building blocks are present, as discussed, in Peirce's philosophy because he is following a Hegelian template. They are, however, notably absent in Deely. In fact, his account follows, in many respects, the more 'interpretive' model espoused by biosemiotics. Deely argues, for example, that (Deely 2009: 65):

The things of the environment, then, begin as objects in the interaction between the animal organism and its material surroundings inasmuch (and only inasmuch) as this interaction sparks awareness, sparks a cognition. In this initial cognition the environment is aspectually and in limited ways objectified or made to enter into the awareness of the organism, made known; whence this initial awareness is *interpreted* by the organism on the basis of its biology and experience (in which the past and the hopes too of the organism

we should not think of Peirce’s framework as a “statics of classification” but, rather, as a “dynamics of semiosis” (Muller 1994: 145).

In day-to-day human experience ‘signs’ are encountered at different stages in Peirce’s semiosis. This involves an ascent from qualisigns, to signs with developing ‘objects of thought’, through to fully created symbols. Some ‘objects of thought’, indeed, may never reach the stage where they become symbols and may never be utilised, as a result, in propositions or in arguments. As a result, ‘objects of thought’, in the second trichotomy, can be found at different stages of evolution and, indeed, different individuals may think of the same ‘object of thought’ in different ways. For example, the Eiffel Tower can be understood as a physical object, or as a structure with particular indexical attributes (e.g., it is in Paris), or as a symbol of France. These semiotic variations reflect how an ‘object of thought’ may be construed at different stages of its development.

This analysis also helps explain some of Peirce’s more technical terminology when he discusses his sign types. Some signs are not yet developed, but they can still be considered as the potential building blocks of future signs. At this earlier stage, Peirce describes them as “degenerate” signs (EP2: 306), whilst he maintains that “genuine” signs are symbols (EP2: 307) because they are ‘thirds’. But this technical distinction does not detract from Peirce’s contention that all nine sign types play a part in the activity of sign development.<sup>37</sup>

for sure come to bear) and presented within the animal’s objective world as to be sought, avoided, or safely ignored. [my italics]

37 The discussion, in this section, is focused on how signs are formed in the ‘speculative’ stage of their development. But as noted in Figure 1, there is also a second dimension where signs are used, to form propositions and arguments. In this latter stage (‘speculative rhetoric’), Peirce explains how they articulate ‘possibility’, ‘existence’, and ‘law’ (CP2: 236–237). These possibilities are outlined in his table below. I have emphasised the ways these signs are articulated in this *second dimension* by emboldening the words ‘terms’, ‘propositions’, and ‘arguments’ in the third column. This is critical because, in this table, Peirce is working *from the perspective of the third trichotomy*. But this dimension is quite distinct from that of ‘speculative grammar’ where signs are formed.

Sign Combination	Peircean Categories Combined	Explained?
Rhematic, Iconic Qualisign	Possibility/Possibility/ Possibility	A <b>term</b> signifying the possibility of a quality
Rhematic, Iconic Sinsign	Possibility/Possibility/ Existent	A <b>term</b> signifying the likeness of an embodied quality

At some risk of over-simplification, it is possible to outline the overall dynamic within Peirce's sign classification. It acts 'downwards' in the first column and then moves on, in a similar manner, in the second and third columns. This movement concludes, in the bottom right-hand corner, with 'arguments'. As suggested earlier, this ascent should be viewed as a Peircean reflection of Hegel's conceptual evolution from Being to Essence to Notion. Broadly speaking, qualisigns are the equivalent of Being, symbols equate to Notions, and, when the latter combine, in inter-relating arguments, they echo the Hegelian Absolute. In this construal, the activity that takes place in Peirce's second trichotomy is equivalent to Hegel's dialecticism. This is where an Essence is first posited and then progressively determined. In the formation of an icon, the addition of indices, and their sublation into symbols, signs are thought to build upon one other. As Andacht (2013: 519) rightly comments, this dynamic process is at the heart of Peirce's classification:

(continued)

Sign Combination	Peircean Categories Combined	Explained?
Rhematic, Indexical Sinsign	Possibility/Existent/Existent	A <b>term</b> signifying the property of an embodied quality
Rhematic, Iconic Legisign	Possibility/Possibility/Law	A <b>term</b> signifying the likeness of a law
Rhematic, Indexical Legisign	Possibility/Existent/ Law	A <b>term</b> signifying a law of a property
Rhematic Symbolic Legisign	Possibility/Law/Law	A <b>term</b> signifying a symbol in a system
If the Second is an Existent, then also:		
Dicent Indexical Sinsign	Existent/Existent/ Existent	A <b>proposition</b> asserting the property of something
Dicent Indexical Legisign	Existent/Existent/Law	A <b>proposition</b> asserting the law-like property of something
If the First is an Existent, then also:		
Dicent Symbolic Legisign	Existent/Law/Law	A <b>proposition</b> asserting law-like facts
Argument Symbolic Legisign	Law/Law/Law	An <b>argument</b> explained in a system of symbolic laws

If we do not act with theoretical caution, the Peircean sign classification may be misunderstood, and that would lead us to a static, non-triadic, reductionistic conception of the real functioning of signs in the world, as if each kind of sign worked in isolation from each other, or even worse, according to a nominalistic and dualistic mechanism.

## 8.2 Qualisigns, sinsigns and legisigns

As we will see, a Hegelian revision of Peircean semiotics has its greatest impact in Peirce's second trichotomy where a sign builds from icon to index, to symbol, in a way that involves empirical reality. At the level of the first trichotomy, in contrast, there are relatively few points of divergence between other accounts of Peirce and the one that is proposed here. But there are still important points that should be highlighted. The most critical of these derive from the fact that modern semioticians should not assume that they know the identity of the representamen. If they make this error, they undermine its inherent indeterminacy. This is critical to an understanding of Peirce's classification because such construals lead to features of the second trichotomy being unwittingly included within the first trichotomy.

Peirce describes the 'qualisign' in his essay entitled '*Nomenclature and Divisions of Triadic Relations, as Far as They Are Determined*': "a *Qualisign* is a quality which is a sign. It cannot actually act as sign until it is embodied; but the embodiment has nothing to do with its character as a sign" (EP2: 291). A qualisign, therefore, is only the *possibility* of a quality. It is not a sign in its own right; it can only be observed as part of a sinsign. A qualisign, as a result, must be embodied in something else to be experienced – following our analysis of Peircean 'firsts'. An example of a qualisign is a perceptual experience of a shade of red. But one cannot say that it is a shade of 'red' at this point – it simply represents the *possibility* of being such; it has no *actual* identity. Two issues are key here. Firstly, the qualisign, because it is a representamen, is still a 'vague'. It might be shade of red, but it also might be a shade of 'crimson', or 'magenta'. Secondly, this treatment of the qualisign parallels earlier discussions of Peirce's percepts and 'perceptual judgments'. The percept is a 'vague' that is subsequently classified by a 'perceptual judgment'. This is exactly what a qualisign is too. It is no more than a 'possibility' because 'perceptual judgments' are always open to revision. The only difference, in the case of the qualisign, is that a perceptual 'vague' is now enrolled in a sign.

In terms of the sinsign, Peirce defines this sign type as (EP2: 291):

A *Sinsign* (where the syllable *sin* is taken as meaning 'being only once' as in *single*, *simple*, Latin *semel*, etc.) is an actual existent thing or event which is a sign. It can only be so

through its qualities; so that it involves a qualisign, or rather, several qualisigns. But these qualisigns are of a peculiar kind and only form a sign through being actually embodied.

There is wide agreement as to what Peirce intends by the qualisign, but with the sinsign a range of different interpretations are encountered. The most useful involves an understanding of what is included, and what is not included, in this sign type – and this, in turn, depends on a grasp of what the columns and rows in Peirce's sign classification entail.

With the sinsign, a dyadic (but momentary) relationship is observed; and, critically, no 'object of thought' (in the second trichotomy) is yet involved in the sign. In the quotation above, Peirce emphasises that the sinsign involves the embodiment of a qualisign. But it is not possible to be sure what that embodied quality is. A sinsign, therefore, is a 'vague' quality that is embodied – an aspect of the sinsign that is often underplayed. For example, assuming that the identity of a 'sign vehicle' is known, Jappy mistakenly claims that a 'sketch', or a 'photograph', are sinsigns (Jappy 2013: 13). But, in doing so, he has already given the embodied qualisign an identity. This assumption, however, is to run ahead of ourselves. Likewise, Liszka (1996: 36) discussing sinsigns, talks of a "red buzzer", thereby giving the experience of red a specific identity – something which is not yet possible with a sinsign. It is important to emphasise, however, that whilst a sinsign is still 'vague', it has, at least, been actualised.

The legisign is the last of the three signs in the first trichotomy. Peirce describes it in these terms (EP2: 291):

A *Legisign* is a law that is a sign. This law is usually established by men. Every conventional sign is a legisign. It is not a single object, but a general type which, it has been agreed, shall be significant. Every legisign signifies through an instance of its application, which may be termed a *Replica* of it. Thus, the word, 'the' will usually occur from fifteen to twenty-five times on a page. It is in all these occurrences one and the same word, the same legisign. Each single instance of it is a replica. The replica is a sinsign. Thus, every legisign requires sinsigns. But these are not ordinary sinsigns, such as are peculiar occurrences that are regarded as significant. Nor would the replica be significant if it were not for the law which renders it so.

Legisigns, therefore, are signs which rely on conventional rules or laws "established by men" to give them significant value. However, and importantly, a legisign does not tell us about the empirical world because, like the sinsign, it is not in the second trichotomy. The legisign, therefore, is "a general type which, it has been agreed, shall be significant". Legisigns, as a result, *include* conventional signs, but *exclude* any reference to the empirical world. They are systems of signs created by human culture. As such, the legisign exists in a semiotic space that does permit *arbitrary* sign systems. Two individuals can, for example, agree that

a bottle cap can ‘stand for’ a missing rook in a game of chess. They can decide upon this convention without the category of secondness (empirical reality) impinging upon them. As such, Peirce argues that “this law is usually established by men”. In other words, Peirce places the whole of Saussurean semiology in this part of his sign classification. Legisigns are signs based on systems of conventional rules and sinsigns are ‘tokens’ of these rules. Saussure’s arbitrary sign holds sway here, but this is because legisigns are in the part of Peirce’s sign classification which is yet to include ‘objects of thought’.

The fact that the category of secondness has no impact on the meanings of legisigns is often overlooked by commentators. The full implications of this oversight only become apparent, however, in the next stage of sign development – the icon. This sign type, initialising the second trichotomy, gives the emerging sign an empirical footing in the world. The icon achieves this because it is the first sign type to introduce a putative empirical ‘object of thought’ into sign formation. As such, the icon forms a lynchpin in Peirce’s semiotics. It permits a transition from the first trichotomy to the development of the intellect’s empirical conceptual apparatus. The icon, therefore, is fundamental to Peirce’s account of how Cartesian dualism can be overcome through his semiotics. And because of this, the icon is the central focus of the following two chapters.



## 9 The received view of the Peircean icon

As has been suggested, the icon is a key element in Peircean semiotics because it is at this point that his sign types begin to engage with empirical reality. As such, the icon is the semiotic mechanism that allows the human mind to cross the cognitive ‘gap’ imposed by Cartesian dualism. The icon establishes a cognitive vehicle (an ‘object of thought’) which becomes a placeholder for subsequent indexical knowledge of the world. None of this, however, is evident to semioticians if they retain adherence to ‘secondary dualism’. If they assume that signs are known ‘sign vehicles’, the icon simply becomes a sign type based on similarity. But this status would be a pale reflection of the role of the icon in Peirce’s semiotics.

This discussion of the Peircean icon falls into two parts. In this chapter, an evaluation is conducted of how the icon has been construed, with varying success, by a range of modern semioticians. In the next chapter, a revised account is then proposed which contextualises the icon within Hegelian philosophy – a task seldom attempted in the secondary literature. It will be suggested, in this second chapter, that the Peircean icon equates to the Hegelian Essence. It is an identity, or ‘form’, posited by the mind, which initiates concept formation.

The ‘received’ view of the icon is well known. It maintains that it involves a relationship of ‘similarity’ between two things – the sign (vehicle) (residing on the ‘mirror’ of the mind) and its referent object (in the world). As such, the iconic sign is frequently contrasted with the index and the symbol. The relationships between these three sign types and their respective ‘objects’ (in the world) is how they are conventionally differentiated. There are many examples of this approach in the literature. Fiske (1990: 46) argues that “in an *icon* the sign resembles its object in some way; it looks or sounds like it. In an *index* there is a direct link between a sign and its object; the two are actually connected. In a *symbol* there is no connection or resemblance between sign and object: a symbol communicates only because people agree that it shall stand for what it does”. And Delaney (1993: 136) makes a similar distinction between the three sign types:

Icons are those signs which represent their objects in virtue of a qualitative resemblance to them (paintings, maps); indices represent their objects in virtue of some dyadic existential relation, such as causality or indication (weathervanes, directional arrows); symbols represent their objects only in terms of some general conventions or rules (nautical flags, Morse code).

The icon, therefore, has a relationship with an object based on “resemblance”; the index on an “existential relation”, and the symbol has a relationship with

its object founded on “conventions” or “rules”. But, as we have seen, Peirce means an ‘object of thought’ when he uses the term ‘object’ and it follows that his three sign types should not be distinguished on this basis. ‘Secondary dualism’, of course, plays a role here. If semioticians assume that the ‘object’ is in the world, it will follow that the icon becomes an image of that object on the ‘mirror’ of the mind. There are many examples of this in the literature; Morris talks about the similarities between the sign (as a mental entity) and its ‘denotata’ (Morris 1946: 349) and Sebeok likewise discusses the similarity between the signifier and its ‘denotata’ (Sebeok 1994: 28). Such accounts lead to the icon being misconstrued as a similarity established across a dualistic divide.

## 9.1 Distinguishing icons from hypoicons

If these potential confusions are not enough, there is also an additional piece of Peircean terminology which demands clarification. This is his distinction between icons and ‘hypoicons’. He makes this distinction, paradoxically, to clarify his own concept of iconicity. But the effect is often to deepen confusion.

Icons involve the notion of similarity, but Peirce also recognises that some things are *assertions* of similarity. Peirce wishes to set these phenomena aside as being separate to iconicity itself. Peirce distinguishes these kinds of phenomena by calling them ‘hypoicons’ (EP2: 273–274):

But a sign may be *iconic*, that is, may represent its object mainly by its similarity, no matter what its mode of being. If a substantive be wanted, an iconic Representamen may be termed a *hypoicon*. Any material image, as a painting, is largely conventional in its mode of representation; but in itself, without legend or label, it may be called a *hypoicon*. Hypoicons may roughly [be] divided according to the mode of Firstness which they partake. Those which partake the simple qualities, or First Firstnesses, are *images*; those which represent the relations, mainly dyadic, or so regarded, of the parts of one thing by analogous relations in their own parts, are *diagrams*; those which represent the representative character of a representamen by representing a parallelism in something else, are *metaphors*.

Peirce thus maintains that an icon “may represent its object . . . no matter what its mode of being”, whilst hypoicons, in contrast, are images, diagrams or metaphors. Importantly, he uses the word “material” to describe hypoicons. All three have one thing in common; they are public *representations* of similarity. This has the effect of placing hypoicons in Peirce’s *third* trichotomy – whilst iconicity operates in the *second* trichotomy.

In contrast to hypoicons, the action of iconicity, and icon formation, is a cognitive activity that takes place within the individual mind. This critical distinction can be overlooked if it is assumed that images, photographs, or diagrams are icons

because of their similarity to the objects they depict. Andacht, however, fully recognises Peirce's intended distinction between iconicity, and hypoicons. He maintains that there is a "distinction between the purely qualitative possibility (the icon proper) and its material embodiment (the hypoicon)" (Andacht 2013: 509).

It must be acknowledged, however, that Peirce, himself is hardly consistent in the use of his own terminology. For example, having cited a painting as an example of a 'hypoicon', he can also be observed referring to a photograph as an 'icon' when he states that "a photograph is an icon, usually conveying a flood of information. A piece of mimicry may be an auditory icon" (EP2: 13). These inconsistencies do make his analysis of iconicity difficult to follow. But leaving this aside, it is important to now review how other commentators have construed the icon.

## 9.2 Attacks on the Peircean icon

There have been considerable attacks on the Peircean icon in the late twentieth century. These have represented an attempt to demonstrate that the icon is little more than a conventional sign; in other words, it operates like a symbol. As Stjernfelt observes, there has arisen, as a result, a "thoroughgoing conventionalism" (2007: 51) in semiotic analyses of this sign type. Petrilli's definition of the icon (Petrilli 2010: 242) serves to exemplify such misconceptions:

**Icon:** One of three types of signs identified by Charles S. Peirce, the other two being index and symbol. The icon is characterised by a relation of similarity between the sign and its object. However, similarity alone will not suffice to determine an iconic sign. Twins look similar but are not signs of each other. My reflection in the mirror looks like me but is not an iconic sign. For iconic signs to obtain the effect of convention or habit social practices or special functions must be added to similarity. Iconic similarity is a special kind of similarity: it is an abstraction on the basis of convention, for it privileges given traits of similarity and not others.

Several points can be made here. Firstly, as we have seen before, Petrilli claims that "a relation of similarity between the sign and its object" forms the icon. Secondly, she suggests that icons are, therefore, misconceived because many things (which are also like each other) are not icons. She concludes, as a result, that similarity must be an illegitimate basis on which to establish iconicity. Thirdly, she comes to the view that the icon must, therefore, be a conventional sign because only this factor privileges some kinds of similarity over others. Chandler forms the same opinion when he holds that "semioticians generally maintain that there are no 'pure' icons – there is always an element of cultural convention involved" (Chandler 2002: 40).

Umberto Eco initiated this critique of the Peircean icon by insisting upon its conventionality. He considered various ways in which an icon could resemble its object – in terms of it having the “same properties as its object”, being “similar to its object”, being “analogous’ to its object”, or being “motivated” by its object (Eco 1976: 191). Eco rejected all these solutions as untenable ways of establishing ‘similarity’ (Eco 1976: 200):

Thus, even the continuous line tracing the profile of the horse may be considered as the institution of a relation of similitude by a transformed correspondence point to point between the abstract visual content model of a horse and an image drawn on a given surface. The image is motivated by the abstract representation of the horse, but it is nevertheless the effect of a cultural decision and as such requires a trained eye in order to be detected as a horse’s profile. Similitude is *produced* and must be *learned*.

Eco concludes his critique with a section entitled “*Getting Rid of Iconic Signs*” (Eco 1976: 216–220). Here he argues that icons are formed by social convention; some of these similarities are easily recognised (*‘ratio facilis’*) whilst others are less obviously coded (*‘ratio difficilis’*). But cultural convention, he insists, remains at the heart of iconicity – a position reiterated by Sebeok (1994: 30):

An infant daughter can be said to be an iconic design for her mother if there is a topological similarity between her, as signifier, and her mother, its denotatum; however, the little girl can likewise, though doubtless to a lesser degree, stand as an iconic sign for her father, every one of her siblings, all of her kinfolk, and, further still, all mammals, all vertebrates, and so forth, and so on, in unending retrogression to ever more generalized denotata.

Elsewhere, Sebeok also highlights that the icon does not work reflexively (Sebeok 1976: 130). For example, a photograph of the Pope can be described as an icon, but it makes no sense to describe the Pope as an icon of his own photograph. Such criticisms of the icon betray, however, their underlying assumption that iconicity involves a relationship between an image and an object in the world.

Later in his career, Eco published, in *‘Kant and the Platypus’* (Eco 1999), a remarkably honest revision of his previous thinking on Peirce’s icon. In this, he accepts that he previously misunderstood several elements this Peircean sign. He discusses Kant and the latter’s notion of the ‘schema’. However, Eco makes little mention of Hegel, and there remain significant differences between his revised position and the one proposed in the following chapter. Despite this, it is worth detailing Eco’s revised view – if only to clarify his new perspective on the icon.

In *‘Kant and the Platypus’*, Eco makes a correct distinction between the icon and the hypoicon. He isolates, as a result, what he calls the “problem of perceptual iconism” (Eco 1999: 106–112) – the role of iconicity in sign formation. Eco argues

that ‘primary iconism’ parallels Kant’s notion of “schemata” (Eco 1999: 80) because the latter form classifications of perceptions. He also notes, in an important observation, that such Kantian schemata are the “product of the imagination” (Eco 1999: 81). However, Eco’s revised position still differs from that of Peirce. Whilst Peirce maintains that ‘perceptual judgments’ classify percepts; Eco still insists that such classifications are a matter of *interpretation*. As a result, Eco retains a clear attachment to constructivism (Eco 1999: 88):

By reflecting upon the data from the sensible intuition, by comparing them, assessing them, by using an innate and secret art hidden in the deepest profundities of the human soul (and therefore of our own transcendental apparatus) we do not abstract but *construct* the schemata.

In this passage, Eco seizes defeat from the jaws of victory. On the verge of identifying the linkages between perceptual judgments and Peirce’s icon, Eco retains his nominalist leanings.<sup>38</sup> He concludes that schemata are constructions from sense data and, as such, he preserves an interpretative approach to iconicity. And he maintains, in this constructivist mode, that some of these classifications are formed individually, whilst others are shared within a culture. This is made clear when Eco makes a distinction between “cognitive types” (CT) and “nuclear content” (NC). The former are perceptual categorisations, and the latter are culturally formed (Eco 1999: 137–141; Stjernfelt: 2007: 69). As a result, Eco continues to construe the icon within a cultural framework.

Overall, therefore, although Eco addresses several of the errors in his earlier account of the icon, he still interprets this sign type within the template of ‘secondary dualism’. Stjernfelt agrees with this conclusion, suggesting that Eco remains stranded, as it were, in a “complete quagmire of a crude nature-culture dualism” (Stjernfelt 2007: 65). In addition to this, Eco also construes the icon as forming a similarity between two known identities which renders it *dyadic* in nature. This position is fundamentally flawed because Eco has not grasped the significance of the position of the icon in Peirce’s sign classification. He has not recognised that Peirce uses the idea of ‘resemblance’ in a way which is *monadic* rather than *dyadic*. This point will be discussed in due course. It is central to understanding the icon.

---

<sup>38</sup> Eco (1999: 65) highlights a quotation where Peirce states, referring to Kant, that “if the schemata had been considered early enough, they would have overgrown his [Kant’s] whole work” (W5: 258–259). Peirce’s point here is that Kant’s framework of schema would have resulted in a treatment of perception that would have undermined his intuitionism. Eco, however, does not recognise that Peirce’s notion of the schema opens a revised understanding of the icon based on it positing a ‘form’.

### 9.3 Stjernfelt's diagrammatology

Stjernfelt is recognised as a revisionist of Peirce's icon. Many of Stjernfelt's arguments concerning the icon find important resonances in this essay. Indeed, his assertion that the human mind can form 'natural propositions' echoes the Hegelian claim that synthetic knowledge of the world is possible. But there remain some fundamental divergences between the account of the icon proposed in the next chapter and the one adopted by Stjernfelt. In particular, he places great emphasis on the ability of the diagram to manifest knowledge (in the second dimension of 'speculative rhetoric' Figure 1), whilst tending to minimise the role of the icon itself in the earlier, and formative, stage of sign evolution.

For Stjernfelt, the icon is also based on the similarity between an object and a sign. As such, he largely follows previous interpretations of the icon (Stjernfelt 2014: 206):

Icons function by means of a similarity between the sign and the object, or, as Peirce may also say, by shared characteristics between the sign and its object. Indices function by means of an actual connection between the sign and the object, either of a causal character (the footprint on the beach) or of a purposive character (pointing gestures, deictics, pronomina or proper names in language). Symbols, finally, function by means of a habit in mind or in nature, of connecting two otherwise unconnected entities to a sign.

Stjernfelt diverges from other accounts of the icon, however, in his assertion that diagrams, as a visual manifestation of iconicity, create what he calls "iconical realism" (Stjernfelt 2007: xiv). He sees this way of construing icons as "emancipating semiotics from the anti-scientific tendencies inherent in the merely conventionalist sign approach . . ." (Stjernfelt 2007: ix). And in this respect, Stjernfelt correctly highlights Peirce's "anti-psychologism" (Stjernfelt 2014: 24–35; Copley: 2019: 62). It is in these respects that parallels exist between Stjernfelt and this current essay, but, crucially, he reaches his position through quite different means. As highlighted, Stjernfelt focusses primarily on the second dimension in Figure 1 and the role of diagrams. These diagrams are *hypoi-cons* which provide information about the world, and they achieve this because they are symbols in the third trichotomy. But symbols only have this power to convey information because they *already* contain iconic and indexical signs. As a result, Stjernfelt is quite correct in highlighting the ability of diagrams to deliver "iconical realism", but his position becomes valid only because genuine sign formation has already taken place. It is possible to view Stjernfelt's discussion of the diagram, therefore, as complimenting the analysis here. The utility of the diagram, which correctly Stjernfelt highlights, is, in fact, predicated on the processes of sign formation elucidated in the following chapters.

Stjernfelt primary focus on diagrams has important effects on other aspects of his interpretation of Peirce. He makes a clear distinction, for example, in the first paragraph of his '*Diagrammatology*', between icons and diagrams (Stjernfelt 2007: ix):

This treatise deals with the sign types of icons and diagrams. Icons understood as those signs whose function as signs is due to some sort of similarity between them and their objects – and diagrams as that special sort of icons which represent the internal structure of those objects in terms of interrelated parts, facilitating reasoning possibilities.

Stjernfelt, therefore, distinguishes icons from diagrams. What makes diagrams distinct is that they manifest more than similarity; they also “represent the internal structure” of reality. It is this feature that enables diagrams to offer what Stjernfelt terms an “operational account of similarity” (Stjernfelt 2007: 206–211). Diagrams are thus able to provide knowledge of the empirical world. Stjernfelt states that “as soon as an icon is contemplated as a whole consisting of interrelated parts whose relations are subject to experimental change, we are operating on a diagram” (Stjernfelt 2007: 92). There is, however, a problem in Stjernfelt's terminology here because he conflates his discussion of diagrams with that of icons when, in fact, they are hypoicons. Stjernfelt makes this mistake because he views diagrams as a subset of icons when, in fact, they should be held distinct from the action of iconicity in the second trichotomy.

A primary feature of Stjernfelt's diagrams, however, is their ability to form a bridge across the divisions erected by dualism. Diagrams erase the gap between mental constructions and reality. As such, Stjernfelt concurs with Peirce that human knowledge, based on mediating entities, abolishes such divisions. However, in line with the conflation discussed above, Stjernfelt views the mediating element as being the diagram *itself*. He does not subscribe to the view, proposed earlier, that the mediating element is the ‘object of thought’ present in the sign. However, when such an ‘object of thought’ is finally manifested in a diagram, one can agree with Stjernfelt that a mediating element is present. But it should be emphasised that it is the ‘object of thought’, within the sign, which provides mediation; the diagram simply illustrates it at a later stage.

Within Stjernfelt's account of the diagram there also appears to be an implicit acceptance of ‘secondary dualism’. This emerges when Stjernfelt invokes the notion of ‘mirroring’. Now using the term ‘icon’ rather than ‘diagram’, he states “so, as soon as the icon consists of parts whose relations mirror the relations between the corresponding parts of the object, and the sign is used to gain information about those parts and their interrelations, a diagram is at stake” (Stjernfelt 2014: 207). This passage, focusing on the similarities between a

diagram and the world, echoes conventional interpretations of the icon. Stjernfelt, therefore, whilst suggesting that diagrams enable the mind to cross the dualistic divide, remains still curiously attached to it. The diagram, it seems, is positioned by Stjernfelt as a means of overcoming dualism rather than dissolving it through mediation. But Peirce, in fact, insists that such dualism is utterly mistaken in the first place. He argues that semioticians should think in terms of mediating identities (e.g., ‘objects of thought’) which abolish this divide, and which can be subsequently depicted in diagrams.

Another important feature of Stjernfelt’s icon is its ability to convey knowledge of the *predicates* of an object. In many ways, Stjernfelt’s position on this point is inevitable given his treatment of the diagram. If the latter provides knowledge of what an object is *like* (operationally), then it will depict certain qualities and predicates. As Stjernfelt maintains “because Icons are the means of representing qualities, they generally constitute the predicative side of more complicated signs” (Stjernfelt 2007: 76). Likewise, he describes icons as “providing the predicative, descriptive side of any signification process” (Stjernfelt 2007: 91).

But such a construal has implications for how Stjernfelt views iconicity; it reinforces the secondary dualist influence that has already been noted in his account and it narrows the icon to the role of conveying qualities and relations. But, in the next chapter, it will be shown that this construal deprives iconicity of its central role – that of creating putative *identities* (e.g., ‘objects of thought’) which form the basis of empirical human knowledge. As such, icons deliver more than knowledge of predicates; they create (within the second trichotomy) the potential *subjects* of propositions which are formed later in the third trichotomy.

Overall, Stjernfelt’s revision of the Peircean icon has many merits. It elevates the status of this particular sign type and provides the icon with a central role in Peirce’s semiotics – something that is lacking in Eco’s account. Equally, Stjernfelt reaches many of the same conclusions as the current essay regarding the possibility of synthetic knowledge through his advocacy of ‘natural propositions’. However, he reaches such conclusions by asserting that diagrams, themselves, are the mediating entities which overcome the problems of dualism. He diverges, therefore, from this current essay which suggests that ‘objects of thought’, within the sign, play this mediating role. As a result, Stjernfelt’s claims regarding ‘natural propositions’ find parallels in the following chapters, but for reasons which are different from his own.

Discussion will now turn to a revised account of the Peircean icon. This will involve defining what his icon is, what it does, and how it forms a cornerstone of his sign theory. In so doing, the role of the icon in concept formation will be



evaluated in the context of Hegelian thought. As noted earlier, it will be suggested that the role of Peirce's icon has parallels with the Hegelian Essence; it represents an initial 'guess' at the nature of an indeterminate representamen. As such, the icon forms the foundation for Peirce's semiotic account of empirical concept formation.

# 10 Peirce: Concept formation in the second trichotomy

## 10.1 Revising the Peircean icon

The revision of the icon proposed in this chapter is a cornerstone of the account of Peircean concept formation outlined in this essay. The icon marks the point where signs begin to involve the empirical world. It will be proposed that the Peircean icon is ‘posited’ by the mind (on the basis of similarity) and that it acts as a placeholder in the development of a ‘mediating’ concept – in the same way as the Essence operates within Hegel’s system. As such, the icon represents the first glimmerings of empirical human knowledge. In this respect, it is significant that Peirce describes the activity of sign formation, outlined in Figure 1, as “speculative grammar” (EP2: 272). By using this terminology, Peirce acknowledges the hypothetical nature of the knowledge offered at this point in the second trichotomy; the icon is *speculative* in nature.

To understand the role of the icon it is important to understand its position in Peirce’s sign classification. Throughout the first trichotomy, there is still no ‘object of thought’ involved in the sign. With the icon, however, signs reach this stage of development; the icon is where ‘firstness’ (in the first horizontal row) intersects with an ‘object of thought’ (in the second column). One of the key characteristics of a ‘first’, as noted, is that it represents a *possibility*, and this is precisely what the icon is. But, secondly, the position of the icon in his classification entails something else as well; an icon, as a ‘first’, is also *monadic* in nature. This strongly indicates that the icon should *not* be viewed as a relationship between dyadic entities. Instead, it should be understood as a *single* entity. But the idea that the icon involves *two* similar things is, of course, what critics of Peirce assume – they believe the icon creates a relationship between an external object and a sign. This leads to an important question; how does Peirce combine the idea of similarity with the icon’s monadic status? The answer to this problem is critical to understanding the icon.

Fundamentally, the icon provides the mind with a first guess at reality. The intellect experiences a perceptual ‘vague’ and ‘posits’ an ‘object of thought’. At this point, however, the mind still does not know what the ‘object of thought’ might be; it is merely a *likeness*. This is important; Peirce is using the term ‘likeness’ in a particular manner. He is not asserting that a specific, and verifiable, similarity exists between two *known* entities. Instead, he is suggesting that the mind entertains, with an icon, a vague recognition that two perceptions *might* be like each other. It represents a minimal level of knowledge; a hypothesis

that an ‘object of thought’ might exist, as a particular identity. As Peirce clearly states, “a pure icon can convey no positive or factual information; for it affords no assurance that there is any such thing in nature” (CP4: 447).

In identifying a similarity, a putative ‘object of thought’ is picked out from the Phaneron. It might be objected that Peirce is now contradicting himself. He maintains, in his account of ‘perceptual judgments’, that the mind cannot compare its perceptual judgments; instead, they simply replace each other. How, then, can the mind identify a potential resemblance between two of them? Peirce’s answer, however, that it is the ‘perceptual judgment’ *itself* which draws these two percepts together; ‘perceptual judgments’ always form a class. As a result, the icon is, essentially, a ‘perceptual judgment’ drawn into the signifying process – in the same way that a qualisign is a percept drawn into a sign.

This interpretation of the icon can be traced back to philosophers within the tradition of German Idealism. It was observed earlier that Eco makes a link between the icon and the Kantian ‘schema’, but it was also noted that he mistakenly identifies the schema with the structures of ‘secondary dualism’. In contrast, within German Idealism, Schelling insists that schemas form *perceptual classifications* (Schelling [1800] 1978: 137):

In the commonest exercise of the understanding, the schema figures as the general link whereby we recognise any object as of a certain sort.

A schema, therefore, brings two perceptions together under a single class. It does not compare two separate perceptions, and this is also true of the Peircean icon.

The classificatory nature of the schema also helps explain the icon’s *monadic* status. Considering another quotation from Peirce, he states that “each *Icon* partakes of some more or less overt character of its Object” (CP4: 531). The verb Peirce uses here – partakes – is an important one. If ‘A’ partakes of ‘B’ then ‘A’ shares something with ‘B’. This is not, therefore, a dyadic relationship between two separate entities, but rather the sharing of *one* identity. To illustrate this point, if I see John today, and then see the same John tomorrow, I do not assume (unless I am Hume) that a dyadic relationship exists between two ‘Johns’. Instead, I believe that they are one and the same John; they share the same identity. When discussing the concept of similarity, Peirce argues that iconic resemblance is this kind of relationship. He states that “suggestion by *resemblance* is easily enough understood, as soon as the conception is once grasped that the similitude of two ideas *consists* in the fact that the mind naturally joins them together in thought in a certain way” (CP7: 392). And elsewhere, Peirce talks about two experiences of the colour blue: “some beginner may object that they have both a *blueness* in them; but I reply that blueness is nothing but the *idea* of these sensations and of

others I have had, thrown together and indistinctly thought of at once. Blueness is the idea of a *class*” (CP7: 392). And elsewhere Peirce argues that “identity is essentially a dual relation” (CP1: 446).

What Peirce proposes, therefore, is that in an iconic resemblance, the mind experiences two phenomena as one thing; it encounters them, in a ‘perceptual judgment’, as *members of a class*. The intellect does not perceive two separate known things and compare them; instead, it has an experience of two things together as a *monadic* ‘object of thought’. Peirce supports this when he claims (CP7: 498):

This sort of association by virtue of which certain kinds of ideas become naturally allied, as *crimson* and *scarlet*, is called **association by resemblance**. The name is not a good one, since it implies that the resemblance causes the association, while in point of fact it is the association which constitutes the resemblance.

Elsewhere, Peirce also defines what he means by resemblance – the combining of different experiences into one identity. He suggests that “resemblance is an identity of characters; and this is the same as to say that the mind gathers the resembling ideas together into one conception” (EP1: 254). Peirce’s critics, therefore, utterly miss their intended target. They challenge whether a similarity can be established between two known identities, but Peirce is embarked on an entirely different theoretical enterprise. With his icon, he maintains that similarity forms the basis of putative identity; he does not claim that two separate identities can be judged as being the same.

This analysis of the Peircean icon also parallels the treatment of reality encountered in Leibniz. There, it was observed that monads are the sum of their relationships with the world. They do not, therefore, have an identity and then have relationships with other monads; instead, their identity is formed as the sum of those relationships. This model can be applied to the Peircean icon. It is not a similarity established between two previously *known* identities – it is an identity that is formed by their relationship of similarity.

Murphey accurately grasps Peirce’s position on the icon, and referring to Peirce’s passage on ‘blueness’ cited above, observes (Murphey 1993: 340):

The class concept of blue is a general idea which forms a connection among sensations, but the general idea does not produce those associations – rather it is an idea of the sensations which the mind groups together. It is the fact that the mind connects these ideas which makes them similar – not their similarity which leads the mind to connect them.

These insights into the icon also find parallels in Hegel, who argues that the mind fixes an element in the indeterminacy of ‘Being’ by positing an Essence. In the ‘Phenomenology of Spirit’, Hegel explicitly links this act of ‘positing’ to the creation of an ‘object’. He argues that “one of the terms is posited in sense-

certainty in the form of a simple, immediate being, or as the essence, the *object* . . .” (Hegel 1977: 59). Hegel’s Essence, therefore, represents the mind’s attempt to ‘fix’ reality.

There is one key difference, however, between the Peircean icon and the Hegelian Essence which explains their disagreement regarding secondness. For Peirce, the icon is a nascent identity, *which has no content*, whilst Hegel’s Essence is already replete with empirical content and the inner contradictions which require dialectical resolution. This is why Hegel has no need for ‘secondness’; reality is already encapsulated within the Essence. For Peirce, in contrast, the icon still needs to be ‘filled out’ at an empirical level and this, as will be seen shortly, is the role of the index.

The necessity to ‘fill out’ the icon introduces another feature of it; its purity. Peirce sometimes talks of the icon in these terms because of its stripped-down character.<sup>39</sup> A ‘pure’ icon, for Peirce, is one that simply captures a form or a ‘suchness’. He states, for example, that “a pure icon does not draw any distinction between itself and its object. It represents whatever it may represent, and, whatever it is like, it in so far is. It is an affair of suchness only” (EP2: 163). Peirce also states, elsewhere, that “no pure Icons represent anything but Forms; no pure Forms are represented by anything but Icons” (CP4: 544). And Murphey concurs again with this interpretation, when he concludes that “what Peirce calls an icon then is a sign which expresses the form of its object, and hence it may stand for any object which has a given form” (Murphey 1993: 233–234). A pure icon is thus a form without empirical content; it has, as a result, a ‘dream-like’ quality (EP1: 226):

So, in contemplating a painting, there is a moment when we lose the consciousness that it is not the thing, the distinction of the real and the copy disappears, and it is for the moment a pure dream, – not in any particular existence, and yet not general. At that moment we are contemplating an *icon*.

Another aspect of the icon is its relationship with the imagination. If the mind forms its ‘perceptual judgments’ based on perceived similarity, then it is the imagination which allows such activity to take place. Before Peirce, Kant can

---

<sup>39</sup> The idea of ‘purity’ has already been encountered in Hegel when he described the nature of Being. Confronted by the indeterminacy of Being, Hegel claims (1892/2014: 101) that “pure **Being** makes the beginning: because it is on the one hand pure thought, and on the other immediacy itself, simple and indeterminate; and the first beginning cannot be mediated by anything, or be further determined”. Purity is thus associated by Hegel with this initial stage in concept formation where the mind grasps an Essence. It is a way of describing the experience of Being before dialecticism, or secondness (in the case of Peirce), become involved.

thus be found emphasising the role of the imagination in concept formation (Kant 1998: 211):

Synthesis in general is, as we shall subsequently see, the mere effect of the imagination, of a blind though indispensable function of the soul, without which we would have no cognition at all, but of which we are seldom ever conscious. Yet to bring this synthesis **to concepts** is a function that pertains to the understanding, and by means of which it first provides cognition in the proper sense.

It is the imagination, therefore, that brings perceptions together in monadic classes and creates Peircean icons. The Kantian imagination does not operate on previously received (or known) sense data. Rather, it is involved, at an earlier stage, in perceptual activity itself. In this context, Strawson (1982: 84) points out that Kant uses the term ‘imagination’ in a particular way:

Kant declares the schema to be a product of, and also a rule for, the imagination, in accordance with which, and by means of which alone, the imagination can connect the particular image or the particular object with the general concept under which it falls.

And this view of Kant is supported by Freydsberg (2005: 95) who argues that “in theoretical reasoning, our fragmented intuitions are brought to the unity of pure concepts of the understanding by means of the synthesis of imagination”.

This role for the imagination is relevant to later discussions. For Hegel and Peirce, reason and logic are critical to concept formation, but these factors are always balanced by the role of the imagination. It is this human faculty which allows both of their systems to retain creativity and spontaneity. And this feature of concept formation also re-emerges in Vygotsky when he considers the role of play.

The idea of the icon can also be identified in the early modern period, but, in these centuries, alternative language is used to describe it. Deely observes, for example, that Fonseca has two types of signs – the ‘formal’ and the ‘instrumental’.<sup>40</sup> Deely suggests that the former should be equated to the icon, whilst the latter corresponds to the index. Fonseca states (and note his use of the term ‘object’):

Formal signs are similitudes or certain forms (*species*) of things signified inscribed within the cognitive powers, by means of which the things signified are perceived . . . These signs are called ‘formal’ because they form and as it were structure the knowing power. Instrumental signs are those which, having become objects for knowing powers, lead to

---

<sup>40</sup> Deely suggests that Poinset, in the early seventeenth century, possesses an equivalent of the Peircean icon. In Poinset’s *Tractatus de Signis*, the icon is present in the guise of the ‘idolum’. Deely states that “the closest English word to Poinset’s use of idolum is the term ‘icon’ as semiotically defined by C.S. Peirce” (Deely 2013: 241).

the cognition of something else. Of this sort is the track of an animal left in the ground, smoke, a statue, and the like.

(Fonseca 1564: I.I. cap. VIII. (Quoted in Deely 2009a: 183–184))

In the early modern period, therefore, Fonseca views the ‘formal’ sign<sup>41</sup> as something which “structures the knowing power”.<sup>42</sup> This clearly foreshadows the role of the Hegelian Essence because the latter acts as a starting point for concept development. Osborne also agrees with this interpretation and, when discussing Poinset, states that the formal sign differs from an instrumental sign because it acts as a “medium” (Osborne 2010: 9):

The formal sign causes the knowledge of the significate by representing it. But this sign is not an efficient cause. It acts in the place of the object and shares the formal causality of the object. Its representation takes place by a medium in which (*in quo*), whereas instrumental representation takes place by a medium through which (*per quod*).

Such comments thus support the view that the icon shares features with the pre-modern notion of ‘form’ (or essence). The icon permits an ‘object of thought’ to become present in the mind as an initialising identity. It does this by providing a

---

**41** The notion of ‘form’ is an important one to Peirce and critical to understanding his icon. However, Peirce seldom uses this term, and he also seems reluctant to invoke the associated idea of ‘formal cause’. Instead, he prefers to talk in terms of objects having ‘habits’. Peirce is known for advocating the Aristotelian concept of ‘final cause’ in the teleological aspects of human knowledge (Short 2007: 91–144), but he seldom mentions the idea of ‘formal cause’. Indeed, sometimes he only identifies two types of causation – ‘efficient’ and ‘final’ cause (EP2: 120). This seems to be a potentially important omission in his thought. Joseph Ransdell also views this as puzzling, and he attempts to include the notion of formal cause in Peircean thought (Ransdell 2013: 541–552). Overall, the idea of formal cause is anathema to nominalists. It asserts that things behave according to their identities. In section 13.1 it will be noted that this perspective is implicit in Peirce’s pragmatism because he proposes that objects behave according to their ‘whole conceptions’. Such identities are established, of course, based on experience. Indeed, Peirce even describes ‘substances’ as “bundles of habits” (CP1: 414). Overall, Peirce’s view that objects possess ‘habits’ seems to be closest he comes an invocation of formal cause. He may have decided that the latter was too radical a step.

**42** A parallel to the icon which “structures the knowing power” can be found in Vygotsky. When an icon creates the initial starting point of an ‘object of thought’, it defines the trajectory of its later evolution. This parallels Vygotsky, who talks of words creating ‘pathways’ along which concepts develop. To support the view that a sign must involve the creation of a ‘form’, it is also worth quoting Peirce’s letter to Lady Welby in the spring of 1906 (EP2: 477). In the very first line he states: “I use the word ‘*Sign*’ in the widest sense for any medium for the communication or extension of a Form (or feature)” He immediately goes on to say (EP2: 477): “The Form (and the Form is the Object of the Sign), as it really determines the former Subject, is quite independent of the sign; yet we may and indeed must say that the object of a sign can be nothing but what that sign represents it to be”.

‘medium’ in which the ‘object’ is for the first time conceptualised as a placeholder. For Fonseca, as for Peirce, this initiating ‘form’ has no empirical (e.g., instrumental) content; it is a putative identity (e.g., an ‘object of thought’) without empirical trappings.

In summary, icons represent the mind’s first attempts to establish empirical forms of knowledge – in the shape of posited ‘forms’, or identities. This construal challenges the conventional view that the icon represents a recognised similarity between two known identities.

In our earlier discussions of Stjernfelt, it was also highlighted that he emphasises the capacity of the icon to convey knowledge about predicates and likenesses. But it is now clear that, in fact, the role of the Peircean icon is much broader than this; it is iconicity that has the power to establish ‘objects of thought’. And this necessarily involves subjects as well as predicates. The icon, therefore, begins the process of bridging Cartesian Dualism by establishing a mediating ‘object of thought’ in the sign. As merely posited identities, icons always remain hypotheses, but they mark the intellect’s first step towards synthetic knowledge of the empirical world.

## 10.2 Peirce on indices

The icon initiates an ‘object of thought’ by positing a monadic identity around which further empirical knowledge can develop. The newly formed icon, however, remains an indeterminate ‘possibility’. It is the index, in developing the icon, which establishes empirical relationships between this hypothesised identity and the world making it more determinate, more actual, and more real.

It is worth briefly re-visiting the ‘received’ notion of the index that was highlighted earlier. For there are, again, considerable differences between this received view and the one being proposed here. The former dualistically invokes a link between an index (in the mind) and an ‘object’ (in the world). For example, a perception of smoke is construed as an indexical sign of fire (which is its cause). Likewise, a high temperature is seen as an indexical sign of fever. The indexical sign, in this view, indicates ‘connections’ which are thought to exist in reality. But it is important to ask how such indexical links also inform the activity of concept formation.

On the surface, an index establishes a link between two *known* entities (e.g., smoke and fire). For Hume, such a link is a matter of constant conjunction which, over time, forms a ‘habit’ in the mind. But there must be something incorrect if this Humean interpretation is applied to the Peircean index because, as highlighted earlier, such causal links are only established by ‘thirds’. And,



with the index, our analysis is still focused on the *dyadic* relationships involving secondness. So, what role do indices play in concept formation?

When Peirce gives the example of a weathercock as an ‘index’ of the wind, he is *not* simply claiming that the index gives us knowledge of a causal relation (existing over time) between the wind and the weathercock. What he is asserting, instead, is that the movement of the weathercock is an indexical property of the wind. It enables us to learn something about the wind (as an emerging ‘object of thought’); being able to move a weathercock becomes one of the wind’s attributes (EP2: 14). So, indices, by themselves, do not tell us about causal laws. They merely force us to notice momentary connections in the world and to include them, or not, within an emerging ‘object of thought’. The ‘received’ view of the index, therefore, actually runs ahead of itself in assuming that indices represent causal knowledge. Such understanding is possible, of course, once a ‘third’ has been created and an index is included within it. But the index, *alone*, does not convey such causal knowledge. Earlier, it was noted that Hookway discusses some missing tree bark. He stated that “it is probably only because we know what the deer do to the bark of trees that we take the tree as a sign of a deer” (Hookway 1985: 123). But this account of the index reverses how it operates in concept formation. Hookway is using his prior knowledge of the world (e.g., the behaviour of deer) to establish an indexical sign – when, in fact, the indexical sign should be helping us explain the world.

An index acts, therefore, to tell us which properties are included, or not included, within a particular identity. It does this by saying, as it were, ‘Look! this is included!’ and ‘No! this is not included!’. And the index accomplishes this through the action of secondness. As such, the index not only establishes the empirical contents of the emerging identity, but it *simultaneously* places that identity in the world through the connections that it establishes. A sign thus becomes progressively more embedded in the world, as more linkages are created, and the sign moves from a hypothesis to being a useful ‘tool’ to understand the world. Indices, therefore, determine the empirical contents of an ‘object of thought’ and create conceptual outcomes which echo the ‘distinct ideas’ of the early modern period. Leibniz defined these ideas in terms of the intellect’s ability to distinguish their contents. And in Peirce’s sign theory it is the index that provides this kind of knowledge by ‘filling out’ the identity initiated by the icon. As Peirce explains, this brings “to the interpreter the experience of the very object denoted” (EP2: 307):

It will be observed that the icon is very perfect in respect to signification, bringing its interpreter face to face with the very character signified. For this reason, it is the mathematical sign *par excellence*. But in denotation it is wanting. It gives no assurance that any such object as it represents really exists. The index on the other hand does this most

perfectly, actually bringing to the interpreter the experience of the very object denoted. But it is quite wanting in signification unless it involves an iconic part.

The Peircean index can also be compared with Hegel. The philosophical roots of Peirce's icon can be found in the latter's work, and it is unsurprising to find an equivalent of Peircean indexicality there as well. However, Hegel views the mechanisms through which reality impacts on an emerging concept quite differently. Because he already assumes that Essences contain empirical linkages, Hegel insists that dialecticism must clarify their exact relationships. Referencing Kant's 'Antimonies', he states that (Hegel 2014: 63):

Here it will be sufficient to say that the Antimonies are not confined to the four special objects taken from Cosmology: they appear in all objects of every kind, in all conceptions, notions and Ideas. To be aware of this and to know objects in this property of theirs, makes a vital part in a philosophical theory. For the property thus indicated is what we shall afterwards describe as the Dialectical influence in logic.

Hegel, therefore, agrees with Kant that the contradictions in human thought need to be resolved. But he differs from him in extending the Antimonies to his dialecticism. As Stern (1990: 57) points out:

For, whereas Kant had diagnosed the antimonies as being caused by our attempt to know something beyond experience, Hegel argues that the antimonies are generated by understanding's insistence on thinking in terms of one sided and mutually exclusive categories, so that it cannot settle on the correctness of either one or the other of them, but instead oscillates between them both.

Hegel thus believes that it is dialecticism which is central to an understanding of how objects (of thought) relate to each other in the world (Hegel: [1830] 1894: 420):

Consciousness, having passed beyond the sensibility wants to take the object in its truth, not as merely immediate, but as mediated, reflected in itself, and universal. Such an object is a combination of sense qualities with attributes of wider range by which thought defines concrete relations and connections.

Hegel's dialecticism thus determines empirical connections in the world as they emerge within human concepts. This equates to the indexical stage of concept development for Peirce. But because the two processes have different start points, they appear to be quite different from each other. Hegel, beginning with Essences, wants to *eradicate* the contradictions which they may contain. In contrast, Peirce, starting with icons, as 'pure' forms, wants to *add* empirical relationships through indexical links. But both philosophers seek the same outcome – a system of mediating concepts which both converge on the world and relate to each other.

In summary, the Peircean index, still operating in the second trichotomy, develops the ‘object of thought’ initially posited by the icon. It renders the emerging sign more determinate, more concrete, and it makes the sign a more effective ‘tool’ to understand the world. Conventionally, the index is simply seen as relationship between an object in the world and a sign. In contrast, for Peirce, the index is the sign type which enables an ‘object of thought’ to develop through the actions of secondness. And the outcomes of such indexical activity are relationally defined identities based on empirical experience of the world. Ransdell thus maintains that “Peirce’s semiotic is not about a class of objects. It is about what it is to be an object” (Ransdell 1976: 99). The indexical stage is central to establishing such knowledge; the indices are how the on-going determination of an ‘object’ takes place.

But, as highlighted above, the index can only achieve so much. It cannot encompass the next level in sign creation where ‘thirds’ are created, and causal laws are established. This next stage in ‘the natural history of the sign’ is reached with the development of the symbol. It is only at this point that the sign evolves into what Peirce calls a ‘genuine’ sign.

### 10.3 Peirce on symbols

With the symbol, the last stage of the second trichotomy is reached. Here, the evolving ‘object of thought’ encounters thirdness. As noted, this entails an ‘object of thought’ becoming conceptualised as a new identity, or as a causal law, which also *exists* in the world. ‘Thirds’ exist as ‘objects of thought’ (such as the idea of ‘murder’), even when they possess no corresponding, or direct, sense datum of their own. Equally, they can also exist irrespective of whether an actual symbol has been adopted (by a culture) to represent them. It is possible, as a result, for an individual to have a particular sense of ‘giving’ which has no actual word in their language to describe it. In a very real sense, therefore, these ‘objects of thought’, within the sign, *stand under* the symbols formed in the second trichotomy and so inform the mind’s *understanding* of them.

Such an account is clearly very different from the ‘received’ view of the symbol. Within the tradition of modern semiology, the defining features of the symbol are its arbitrary and conventional characteristics. As Fiske reminds us “in a *symbol* there is no connection or resemblance between sign and object: a symbol communicates only because people agree that it shall stand for what it does” (Fiske 1990: 46). Likewise, Hodge and Kress (1988: 21–22) claim that a symbol is “a merely conventional link, as in Saussure’s ‘arbitrary’ sign”, and Corrington

states that “symbols refer to generals rather than to particulars and have a conventional or arbitrary relation to their referents” (Corrington 1993: 164).

In this received view, the arbitrary nature of the symbol leads to the idea that it can stand for anything that a culture chooses. But this position involves a critical misunderstanding of Peirce’s sign classification. For it has already been noted that this type of arbitrary sign does exist for Peirce, but as a legisign. Positioned in the first trichotomy, the legisign does not involve an empirical ‘object of thought’. As such, it can stand for anything, and it is subject to conventional rules. Peircean symbols, however, are more than legisigns because reality has played a role in their formation (at the indexical stage). It follows from this that Peircean symbols are not just conventional sign types. He makes this clear in a passage that modern semioticians sometimes gloss over (EP2: 269):

Many philosophers say they are ‘mere symbols’. Take away the word *mere* and this is true. They are symbols; and symbols being the only things in the universe that have any importance, the word ‘mere’ is a great impertinence. In short, wherever there is thought there is Thirdness.

Peirce accepts, of course, that the *actual* visual, or auditory, manifestation of a symbol is a matter of cultural choice. And a culture will suggest that certain symbols are more suited to stand for certain meanings than others (green, for example is chosen to stand for environmental issues because it reflects the colour of trees etc). But this is quite different to the Saussurean claim that a sign’s meaning is arbitrary. And Peirce’s position clearly has important implications for the status of words and language. In another passage, he states that “the word itself has no existence, although it has a real being, *consisting in* the fact that existents *will* conform to it” (EP2: 274). So, Peirce asserts, and radically so, that reality conforms to human words because, as symbols, words represent identities that have been previously fashioned by reality. This is possible because symbols contain ‘objects of thought’ which have already developed in the sign. It these underlying ‘objects of thought’ which are, in fact, the bearers of meaning and not words themselves. In a very real sense, therefore, *words do not have meanings; meanings have words*. This position clearly challenges the framework of ‘secondary dualism’ where the mind enjoys the privilege of creating the meanings of words. As Nöth observes “replicas of symbols in their acoustic or written form are indeed lifeless things . . . but symbols as genuine thirdness live on as self-replicative beings” (Nöth 2014a: 180).

This Peircean rejection of the nominalist position is seldom fully grasped by scholars – even though some sense the direction in which Peirce is moving. Corrington, for example, recognising the underlying direction of Peirce’s argument, reflects on what Peirce seems to be suggesting: “this tension remains

unresolved in Peirce although I am increasingly persuaded that he was struggling toward a nonconventionalist understanding of how symbols function to unveil objective and generic features of nature” (Corrington 1993: 145). This, however, is precisely what Peirce is proposing. Symbols do “unveil objective and generic features of nature” and they do this because they stand for their underlying ‘objects of thought’. Elsewhere, Peirce also repeats his rejection of the received view in an unpublished manuscript (MS: 1105), quoted by Rosenthal, when he states that “meaning enters into language by determining it” (Rosenthal 1994: 147n). The meaning of an ‘object of thought’ thus determines the entailments of a word; the word does not specify its own meaning.

A symbol is thus a sign type which encapsulates the meaning (e.g., the indexical attributes) of an ‘object of thought’. In so doing, it becomes a mental ‘tool’. The human intellect can now consider identities in the world, such as social phenomena (e.g., murder), molecules, the law of gravity, or mathematical relations in ways that capture their complex relationships. In what is one of his most insightful descriptions of sign action, Peirce thus asserts that “it appears to me that the essential function of a sign is to render inefficient relations efficient” (SS: 31). Symbols, echoing Stjernfelt’s diagrams, facilitate human understanding of the world.

Earlier, in discussion of Peirce’s category of thirdness, the role of Hegelian ‘sublation’ was highlighted. It is now possible to link the notion of sublation with the evolution of symbols. Sublation enables a representamen to accrue a new meaning whilst still *preserving* its experiential content. Sublation can, for example, turn a metal ring into a sign of love. This semiotic transformation preserves the experiential element of an emerging concept, but, at the same time, ‘lifts it up’ to create a new identity (a ‘third’). When this takes place, the indexical associations previously accrued by an icon are no longer just linked to it by association. Instead, they are now contained within the meaning of the sign. This evolutionary process takes place in three stages:

- **Stage One:** the icon is formed as a putative identity (X)
- **Stage Two:** the icon (X) gathers indexical associations ‘a’, ‘b’, ‘c’, ‘d’

At the third stage, sublation occurs and this inverts the relationship of the elements:

- **Stage Three:** ‘a’, ‘b’, ‘c’, ‘d’ now become signs of ‘X’. ‘As a result, X’ is a ‘third’ because, when ‘a’, ‘b’, ‘c’, and ‘d’ are observed, the presence of ‘X’ can be inferred from them. A symbol, or genuine sign, has now been formed.

In our earlier example of the New York taxis, this is how these particular cars become signs of that city rather than just vehicles with particular associations. It can be argued, therefore, that Hegelian sublation is how the meaning of a symbol is formed. And it is possible to connect this transformation to another important feature of the Peircean sign. In our discussion of ‘thirds’ it was emphasised that an interpretant involves seeing something, not just ‘as something’, but rather ‘as something else’. This is precisely the effect of sublation. Because symbols are ‘thirds’, they contain the indices which, previously, have just been *associated* with a sign. After sublation takes place, however, the mind ‘perceives’ these indices *through* the symbol; it allows the intellect to ‘see something as something else’. Peirce seldom uses the term ‘concept’ in his writings, preferring to talk in terms of ‘signs’. But in his discussion of symbols (in the third category), he uses this term to describe ‘genuine signs’ (EP2: 10):

Symbols grow. They come into being by development out of other signs, particularly from likenesses or from mixed signs partaking of the nature of likenesses and symbols. We think only in signs. These mental signs are of mixed nature; the symbol-parts of them are called concepts. If a man makes a new symbol, it is by thoughts involving concepts. So it is only out of symbols that a new symbol can grow. *Omne symbolum de symbolo*. A symbol, once in being, spreads among the peoples. In use and in experience, its meaning grows. Such words as *force*, *law*, *wealth*, *marriage*, bear for us very different meanings from those they bore to our barbarous ancestors.

It is also essential to understand how symbols work within a cultural environment. In our analysis of thirdness, it was noted that ‘giving’ involves more than the simple passing of an object from one person to another. As a concept, it begins its ‘natural history’ with the hypothesis, *by an individual*, that there is more to this apparently dyadic activity than meets the eye. The individual forms an icon and, in doing so, they posit a potential identity in the world. As this icon accrues indexical properties, the concept of ‘giving’ establishes particular social connections. The individual notices, for example, that ‘giving’ takes place on birthdays, or at festivals, and that it involves wrapping things in ribbon. The individual may also grasp that ‘giving’ involves one person saying certain things, in certain ways, and that this may, in turn, elicit particular responses from a receiver. All these features create a network of indexical properties for the evolving sign. At this stage, however, a symbol has yet to be created. This only happens when sublation takes place and these accrued indices are transformed into *a sign of giving*. At this point, the symbol establishes a set of social ‘rules’ which determine what ‘giving’ involves. These behaviours, in turn, need to be evidenced by any ‘giver’ if a particular act is to be recognised by others as an act of ‘giving’.

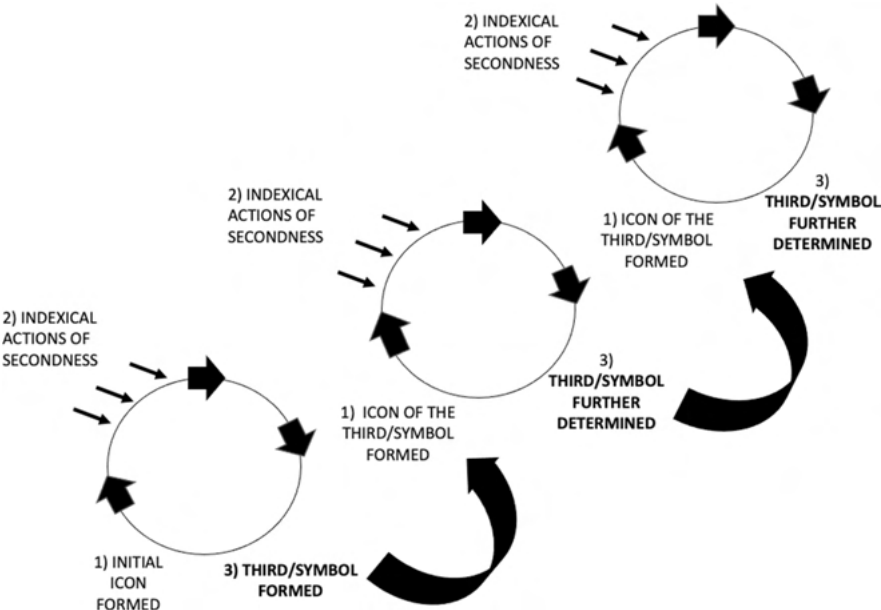
However, if a particular individual displays the ‘wrong’ indices (e.g., they use the ‘wrong’ wrapping paper, or say the ‘wrong’ things), then an ‘act of giving’ may not be recognised by observers. The role of Peircean secondness is important here because it illustrates how meanings, contained in symbols, can spread through a culture *without* any overt discussion taking place amongst its members. Social ‘rules’ tend, instead, to be enforced through the impact of ‘cultural’ secondness, when an individual’s actions are either accepted by others as manifestations of particular ‘thirds’, or they are rejected because they fail to instantiate the requisite indexical signs. It is important to emphasise, however, that social meanings are not created through any tacit agreement, or consensus, between individuals. They are created as *individually formed* concepts running up against the secondness of others. Certainly, this interaction is a social activity, but it does not equate to a claim that meanings are socially constructed. Indeed, Peirce argues that initial concept formation is essentially an individual affair. Only the subsequent *negotiation* of the meaning of a symbol becomes social – when individuals encounter the meanings that others have formed and are forced to qualify their own. But this is a smaller claim for constructivists to maintain.

The meanings of symbols are, of course, never fixed. The precise way in which they evolve can be better understood by considering semiosis in diagrammatic terms (Figure 11). To use the example above, an individual may create a concept of ‘giving’ and, once this has happened, they will encounter *similar* examples of this activity in their daily life. At this point, acts of ‘giving’ will be perceived as ‘thirds’ (as symbols with indexical content), but, crucially, they will also be experienced as icons (because the symbols will be *like* behaviours that have been seen before). These new experiences may confirm the nature of ‘giving’, or they may, instead, initiate new icons and new forms of ‘giving’. A ‘natural history of the sign’ will thus develop. New indexical determinations may be added to the symbol, or secondness may force an individual to distinguish between different kinds of ‘giving’. For example, they may begin to distinguish between acts of ‘giving’ at a child’s birthday party and ‘giving’ at a wedding. It is this constant evolution of the sign that Peirce calls ‘semiosis’. It involves a semiotic development of the sign *itself* through its successive determinations and repeated cycles of the icon/index/symbol stages. This can be contrasted with the more conventional view which views semiosis as repeated acts of interpretation by different interpreters. As Romanini affirms “semeiosis means ‘action of the sign’ and not action of the interpreter” (Romanini 2014: 227).<sup>43</sup> And this also means that, in a Peircean

---

<sup>43</sup> Romanini develops his own version of semiosis which he calls a ‘Solenoid of Semeiosis’. This is explained in his paper ‘Semeiosis as a Living Process’ (Romanini 2014: 228–236). His

perspective, semiosis entails the constant refining, and further determination, of signs as they *converge* on reality. In the hands of modern semioticians, in contrast, if they adopt the notion of interpretation to drive semiosis, there is every possibility that signs will become increasingly *detached* from reality and with more distorted meanings.



**Figure 11:** Semiosis as the Interaction of Peirce's Three Categories and the Three Elements of the Sign.

Peirce, therefore, does not accept the twentieth century view that meaning is constructed within the social sphere. He maintains, instead, that symbols are first formed by the individual through sublation. These meanings are certainly negotiated, at a later stage, within the social environment, but that they are not originated there.

Whilst Peirce maintains that the meanings of symbols are fine-tuned in the 'outward clash', he also recognises that individuals often manage to converse with each other without understanding *all* the indexical components that symbols

---

account differs, however, from the account outlined in Figure 11 because he focuses on the development of the immediate and dynamic 'objects of thought', rather than on the interactions of Peirce's categories.



contain. For example, he describes two men conversing in a railway carriage (CP5: 448n):

Suppose, for example, two Englishmen to meet in a continental railway carriage . . . If one mentions Charles the Second, the other need not consider what possible Charles the Second is meant. It is no doubt the English Charles the Second. Charles the Second of England was quite a different man on different days; and it might be said that without further specification the subject is not identified. But the two Englishmen have no purpose in splitting hairs in their talk; and the latitude of interpretation which constitutes the indeterminacy of a sign must be understood as a latitude which might affect the achievement of a purpose.

Human discourse is thus possible even when two individuals do not know the exact contents of the symbols used by others. This discursive activity takes place in the dimension of ‘speculative rhetoric’ (see Figure 1) which Peirce he defines as the “transmission of meaning by signs from mind to mind” (CP1: 444). In conversation, therefore, each individual needs to make sure that their listener, or reader, grasps the indexical entailments that may be contained within the symbols they use. Peirce observes that (CP3: 433–434):

When an assertion is made, there really is some speaker, writer, or other sign-maker who delivers it; and he supposes there is, or will be, some hearer, reader, or other interpreter who will receive it. It may be a stranger upon a different planet, an aeon later; or it may be that very same man as he will be a second after . . . .

The assertion which the deliverer seeks to convey to the mind of the receiver relates to some object or objects which have forced themselves upon his attention; and he will miss his mark altogether unless he can succeed in forcing those very same objects upon the attention of the receiver.

In human discourse, therefore, the speaker/writer ‘forces’ the contents of their own symbols upon others. In a conversation each speaker must try to establish what is included, and what is not included, within their own symbols. In this activity, a degree of indeterminacy will always be involved. As will be discussed, in the third trichotomy, Peirce calls these words ‘terms’; they sit in the part of his sign classification where symbols revert to being vague ‘firsts’. In conversation, this indeterminacy is always present, but it can also be resolved. But this does not mean that communication entails a ‘transmission’ of thought. As Stjernfelt correctly points out, it is difficult to see how such a process could possibly work. He asks, “how are we to establish the meaning of a lexeme if it consists in nothing but millions of vague, fleeting, instantaneous mental events which we are only able to address via the insecure roundabout of trusting people’s own introspective reports about their own mental experiences?” (Stjernfelt 2014: 15). In contrast, Peirce’s communication model is far more credible; meaning is first

formed by individuals themselves and then it is revised in conversation with others.

It is not surprising, of course, to find that this Peircean account of the symbol, and human communication, has roots in Hegel. The latter maintains that an individual, in their own activity of concept formation, can only establish a subjective perspective – if only because they cannot experience every way in which a concept is manifested in the world. To achieve a fuller understanding of a concept, therefore, the individual needs the involvement of others. For example, Hegel suggests that “the Idea is the Truth: for Truth is the correspondence of objectivity with the notion: – not of course the correspondence of external things with my conceptions, – for these are only *correct* conceptions held by *me*, the individual person”. And in the same passage (Hegel 2014: 229), he goes on to state that:

Every individual being is some one aspect of the Idea: for which, therefore, yet other actualities are needed, which in their turn appear to have a self-subsistence of their own. It is only in them altogether and in their relation that the notion is realised. The individual by itself does not correspond to its notion. It is this limitation of its existence which constitutes the finitude and the ruin of the individual.

An individual, therefore, only possesses a partial understanding of the relational aspects of an ‘Idea’. If this position is to be attenuated, the individual must participate in human discourse. For Hegel, the social realm is, therefore, critical in the development of meaning. Conversational access to the perspectives of others is what prevents “the ruin of the individual”. But Hegel is not suggesting, at this point, that meanings are made by culture. All that he, and indeed Peirce, are claiming is that the social dimension refines an individual’s concepts by providing greater perspectives on them – a dynamic that is rooted in the relational view of reality that they both espouse.

It is also worth highlighting that, in Figure 11, an individual not only observes experiences that re-confirm the contents of a particular sign but they will encounter other (potentially very different) phenomena which also have similarity to it. This is, of course, the underlying basis of the kind of metaphorical thinking in which the mind experiences iconicity acting in more playful ways. Metaphor, it can be suggested, is a side-effect of the mind’s natural inclination to form icons. It has an instinctive tendency to understand the world through similarities – even when they may not exist in the world.

To conclude this chapter, it is also helpful to consider one final point. Why, in the ‘received’ view, is it so readily accepted that symbols are formed by social convention? The answer lies, of course, in the fact that the modern view assumes that only physical objects exist in the world. As such, this position dismisses the suggestion that semiotic activity creates ‘objects of thought’ which possess synthetic

reality. The notion of 'murder', therefore, remains always an interpretative 'construction' rather than something that is real. It is this self-imposed denial of the mind's ability to experience the world through 'thirdness' which leads to the semiological conclusion that symbols are conventional. This perspective, inherited from 'secondary dualism', therefore hangs by a thread; the modern reluctance to accept that 'objects of thought' have real existence.

# 11 Peirce: The third trichotomy

## 11.1 The third trichotomy and ‘natural propositions’

With the completion of the second trichotomy, a point has been reached in Peirce’s sign classification where a concept has been formed (at least initially), and yet an actual symbol may (or may not) have been adopted to represent it in human discourse. The ‘natural history of the sign’ began with the positing of a hypothetical identity. This accrued indexical inclusions and it has now been sublated into a ‘third’. This new identity, therefore, *contains* the indices that helped form it and which have been determined by the actions of secondness. The symbol, as a result, is neither an exclusively social, nor personal, construction. Instead, it represents a synthetic identity combining the mental and the experiential in a semiotic ‘amalgam’. As a result, the mind is now armed with a concept to understand the world and form propositions to describe it. And it is this latter activity which, for Peirce, takes place in the third trichotomy. It is here that he moves from an account of concept formation to a consideration of how signs are employed in human discourse. As such, one of the main tasks of this essay has now been addressed. But it is still useful to consider how concepts are used within the third trichotomy (e.g., the second dimension outlined in Figure 1). As Bergman highlights (2015: 469), “Peirce defines speculative rhetoric as ‘the study of the necessary conditions of the transmission of meaning from mind to mind, and from one state of mind to another’”.

In this context, communication is the central focus of the third trichotomy; here signs are used to convey information. This is, quite naturally, a trichotomy that interests semioticians with a linguistic background and it is unsurprising that Peirce is often cited in semiotic communication theory. But, as noted above, this should not draw attention away from the other role of signs – their role in concept formation.

Another feature of Peirce’s analysis should also be emphasised. Until this point, he has been solely concerned with how ‘objects of thought’ are created, and how they are transformed into symbols. But even when such conceptual apparatus has been assembled, the intellect is still unable to think in terms of the *contingent* relationships which exist between objects. For example, the ‘object of thought’ of a ‘cat’ may have been formed, and this may mean that we know the kinds of things that cats do. But that does not follow that a proposition can be constructed stating that there is a cat sitting on a mat right now. This, again, is the task of the third trichotomy; to construct propositions using the concepts formed in the second trichotomy.

Beginning with the first element of the third trichotomy, Peirce defines the ‘rheme’ as a ‘term’. This is a symbol (EP2: 285) which is now reduced to the status of a ‘first’. This happens because a symbol is now being used in communication, and in this discursive context, it will be indeterminate for *other* people; it may, as a result, have any number of meanings for a potential listener or reader. This explains the role of conversation for Peirce. It is through human discourse that individuals encounter the indexical inclusions in other people’s symbols.

Because the rheme is a ‘first’ it conveys little information. However, it can be placed, potentially, within a proposition (EP2: 285). This echoes the role of the qualisign which, as noted, is not yet ‘embodied’ in a sinsign. Peirce thus maintains that “a Rheme is a sign which, for its Interpretant, is a sign of qualitative possibility, that is, is understood as representing such and such a kind of possible Object. Any rheme, perhaps, will afford some information; but it is not interpreted as doing so” (EP2: 292). Nöth also describes the rheme as follows: “Rhemes, being single words in isolation, do not convey any information. It is logically impossible for a rhematic sign to be also informative” (Nöth 2014b: 16). Importantly, however, in the light of previous analysis, a rheme is not an arbitrary ‘word’. It is term which includes (for its user) an ‘object of thought’ and its indexical associations. As such, it potentially contains connections with the world capable of being actualised in a proposition.

At the next stage in this trichotomy, the dicisign (or dient sign), involves the formation of propositions – making it possible to make assertions about the world. A proposition makes a claim which describes a *particular* state of affairs – such as “there is a cat on the mat”. In analysing the nature of the dicisign it is important to understand its structure and how it makes such assertions. How this is achieved is debated by Stjernfelt (2014) and Bellucci (2017). Whilst not being central to this essay, this issue is still of relevance because the above account of concept formation impacts on the structure of the dicisign.

A proposition makes a statement about the world. In conventional accounts, a proposition seeks to correspond to a particular state of affairs. This way of construing the proposition, therefore, entails a tacit acceptance of Cartesian dualism. But Peirce proposes a different view of the proposition which is consistent with his account of concept formation. Because concepts (as symbols) are, themselves, already fashioned through secondness, this means that, in a proposition, terms (rhemes) already contain potential empirical entailments. As a result, a coherent propositional structure can exist – even if no one actually asserts it. Peirce suggests, for example, that “to fix our ideas, let us set down the proposition ‘Tully has a wart on his nose’. That is a proposition, whether it be true or not, whether anybody asserts it or not, and whether anybody assents to it or not” (EP2: 278). Propositional structures operate, therefore, through the relationships of their

component parts. They bring two ‘objects of thought’ together and assert that a connection may exist between them. It is this structure that creates a proposition – not the empirical question of whether it is true, or not. Indeed, this philosophical position has been noted before in Peirce – when he claimed that ‘perceptual judgments’ still possess a propositional structure even if they are false.

Peirce’s example of Tully is, in some ways, an unfortunate one – because it involves a specific individual. The point Peirce is making becomes a little clearer with the example of the cat on its mat. There is a difference between:

- A. Cats sit on mats
- B. A cat is sitting on the mat.

In the first line, (A) is true by virtue of the contents of the ‘object of thought’. The suggestion that “cats sit on mats” uses an ‘object of thought’ of ‘cat’ (which, in itself, entails the idea of ‘sitting on mats’ because this is an index which is observed in cats). Importantly for our later discussions, it follows that (A) is an analytic statement by virtue of the terms that it employs.

But proposition (B) is quite different. The latter makes an additional claim that a particular cat is sitting on a particular mat right now. How does Peirce deal with this claim regarding a specific situation? His answer derives from the position of the dicent sign in his sign classification. It is positioned at the point where the category of secondness is involved; the dicent sign makes a *momentary* indexical connection between the world and the interpretant it creates. Peirce (EP2: 278), for example, states that:

Now in performing either of these acts [assertion and assent], the proposition is recognised as being a proposition whether the act be performed or not. Nor can a sound objection be grounded on the fact that a proposition is always understood as something that *might be* assented to and asserted. For our definition of the Dicisign more than recognises the truth that in stating that (supposing the proposition to be a Dicisign) the Interpretant of it (that is, the mental representation, or thought, which it tends to determine) represents the proposition to be a genuine Index of a real Object, independent of the representation. For an Index involves the existence of its Object. The definition adds that this Object is a Secondness, or real Fact.

In other words, a proposition contains an index because of its position in the third trichotomy. As a result, it can make a claim about the empirical world. This assertion, however, is only momentary in nature. It does not provide any rational underpinning for that belief. This further step only becomes possible when Peirce’s analysis moves on to the ‘argument’.

Stjernfelt highlights Peirce’s discussion of dicisigns (Stjernfelt 2014: 55) in the 1903 ‘Syllabus’ (EP2: 267–288). He observes that the dicisign consists of two

parts – an iconic and an indexical element. The iconic side of the dicisign provides an account of what the world is *like* (a quality established through iconicity), whilst the indexical element of the dicisign provides a reference in the world. For Stjernfelt, however, the iconic element acts as a *predicate*. He states (using examples which are, in many instances, hypoicons), that “photographs, paintings, moving pictures, diagrams, graphs, algebras, gestures, object samples – in short, all possible description devices may enter into a dicisign to perform the functional task of predicative iconicity in the Dicisign” (Stjernfelt 2014: 62). But in our previous analysis, it was emphasised that icons do much more than convey predicates – they enable the mind to form ‘objects of thought’. It follows that, in any proposition, an icon must always be involved because it has initiated the emergence of the ‘object of thought’. As a result, Stjernfelt misplaces the role of icon. Through the creation of ‘objects of thought’, icons are involved in the formation of the *subjects* of propositions. They do not simply reflect the predicates they contain.

However, this combination of iconic and indexical elements in the dicisign means that Stjernfelt can assert that propositions are not, as they are in the nominalist tradition, simply subjective constructions formed using arbitrary words. Instead, dicisigns constitute ‘natural propositions’ – the title of his 2014 work (Stjernfelt 2014). Such a conclusion suggests important convergences with the main arguments of this essay. As Stjernfelt claims (Stjernfelt 2014: 105):

A most remarkable implication of a Peircean notion of Dicisigns is the possible naturalization of propositions. Propositions are taken to function without the intermediary of language or consciousness, and propositions are taken to exist before the existence of human beings – in short, the expression of propositions seem to be natural inhabitants of any system or process of signs imaginable.

Stjernfelt’s radical claims about the dicisign are, therefore, valid, but he tends to underplay why a dicisign can operate in this manner. For Stjernfelt, a dicisign indicates a particular state of affairs (often in a diagram) and it combines this with an indexical assertion that this is the case. But Stjernfelt does not fully grasp why this is possible. This is, in part, the result of his focus on diagrams, but it is also due to his reticence regarding the earlier, and formational, dimension of ‘speculative grammar’. For it is the previous ‘natural history of the sign’ which means that ‘natural propositions’ can be formed. They contain both iconic and indexical elements (because they employ symbols) and it is this factor which gives them their synthetic status. And, indeed, it is this aspect of Peirce’s semiotics which underpins his claim that reality is a matter of “concrete reasonableness” (CP5: 3).

Stjernfelt’s emphasis on the dicisign is also manifested in his analysis of its potential role in biosemiotics. He argues that dicisigns are the most important

signs because they are ‘truth-bearing’. Other signs are seemingly less important because they are ‘degenerate’ (Stjernfelt 2014: 141):

The ‘highest’ Peircean sign types: propositions and their linking into arguments, are what represents aspects of reality (propositions) and give rise to inference to action (arguments) – they must be present from the very beginning of biosemiotics, albeit in a rudimentary indistinct proto-form, corresponding to Peirce’s idea that propositions are genuine signs, and the whole periodic table of simpler signs are but degenerate signs which naturally occur *within* propositions. Selection forces the survival of truth-bearing signs – Dicisigns.

As Copley (2019: 64), points out this position seems to challenge the ‘common sense’ view that simpler sign types must exist before more complex ones develop. But our analysis of how symbols evolve (in the second trichotomy) can now reframe Stjernfelt’s view. If the symbols employed in dicisigns evolve from combinations of iconic and indexical elements, then these building blocks of knowledge will have been present in the earlier stages in biological evolution. Organisms will have been able to form icons and their indexical associations long before they were able to form sublated symbols (and, as a result, create dicisigns). It is likely, as a result, that animals could have achieved relatively high levels of cognition, using icons and indices, without the requirement to create ‘genuine’ signs. They would not have needed to have formed dicisigns in the third trichotomy.

Returning to the final part of Peirce’s sign classification, his last sign type is the ‘argument’. This sign type combines propositions. It enables the intellect to create coherent systems of thought which not only describe the world, but also provide it with *reasons* for describing it in those terms. In the case of dicisigns, it was observed that a proposition can only make a *momentary* assertion about the world; it cannot provide reasons *why* it might be valid. In his discussion of dicisigns, Peirce makes this clear (EP2: 275):

The readiest characteristic test showing whether a sign is a Dicisign or not, is that a Dicisign is either true or false, but does not directly furnish reasons for its being so. This shows that a Dicisign must profess to refer or relate to something as having a real being independently of the representation of it as such, and further that this reference or relation must not be shown as rational, but must appear as a blind Secondness.

An argument, therefore, places a proposition in a system, or web, of supporting reasons. A proposition connects two ‘objects of thought’, but it cannot “furnish reasons for its being so”. The argument, however, is the sign type that achieves this; it creates a system of thought enabling an understanding of why something might be the case (EP2: 292):



An *Argument* is a sign which, for its Interpretant, is a sign of a law. Or we may say that a Rheme is a sign which is understood to represent its Object in its characters merely; that a Dicisign is a sign which is understood to represent its Object in respect to actual existence; and that an Argument is a sign which is understood to represent its Object in its character as a sign.

In many ways, therefore, Peirce's system of interrelating arguments parallels Hegel's notion of the 'Absolute Idea' (Hegel 2014: 229). This concept has plagued Hegel's philosophical legacy because of its many metaphysical connotations. But his system of interconnected concepts, containing an "absolute unity of the notion and objectivity" (Hegel 2014: 229), is precisely what Peirce invokes with his final sign type. Indeed, Peirce alludes to Hegel when describing his connected system of signs as follows "a *sign* is connected with the 'Truth', i.e., the entire Universe of being, or, as some would say, the Absolute . . . ." (EP2: 303). Peirce, therefore, proposes a system of interrelated signs which, as arguments, are mutually supportive of each other. It is a perspective which suggests that the human mind develops a sense of harmony amongst its concepts.

This depiction of the universe, as an evolving harmony, can also be found in Peirce's view (CP6: 302) that human understanding tends towards 'agapism'. He sees this stage in the development of human knowledge as following the two earlier stages of 'tychism' and 'anancasticism'. This framework, again, has strong Hegelian overtones and suggests that human knowledge has fundamentally progressive characteristics. In the educational sphere, Olteanu argues that this Peircean notion of an emerging harmony in human understanding can also be applied to educational theory (Olteanu 2015: 211):

The purpose of education is much more than serving the mere functionality of society; the purpose of learning and education is research (pursuit of Truth). Therefore, the Tychism-Anancasticism-Agapism cosmological evolution applied to learning reveals the Learning-Education-Research evolution of the role we play in the Universe's revelation of itself. Thus, Peirce teaches that research is the Law of Love: 'The movement of love is circular, at one and the same impulse projecting creations into independency and drawing them into harmony' (CP6: 288).

This agapist vision of an evolving 'harmony' in human knowledge also derives from Leibniz. An earlier version of it was noted when his portrayal of the universe as a web of interrelating monads was discussed. Each monad, for Leibniz, is defined by the sum of its relationships with others and he viewed this system as being in harmony with God. In the pursuit of higher knowledge, Leibniz argued that if the human mind could only form its concepts with enough precision (e.g., enough 'distinctiveness'), it would eventually attain a level of knowledge comprising 'real definitions'. And, because these concepts would be relationally

defined, they would mutually reflect each other. Leibniz gave a name to this inter-relating web of monads; he called it a system of ‘pre-established harmony’ (Leibniz [1705] 1951: 586–592). It is this system of conceptual harmony that Hegel is seeking to re-establish, a century later, when he asserts (Hegel 2014: 149):

Existence is the immediate unity of reflection-into-self and reflection-into-another. It follows from this that existence is the indefinite multitude of existents as reflected-into-themselves, which at the same time equally throw light upon one another, – which, in short, are co-relative, and form a world of reciprocal dependence and of infinite interconnection between grounds and consequents.

And it is this harmonious unity of knowledge which is echoed by Peirce in his ‘agapism’. It is founded upon the last sign type in the third trichotomy – the argument.

## 11.2 Redefining biosemiotic meaning making

Having considered Peirce’s three trichotomies, it is now possible to return to our earlier discussion of biosemiotics. It was noted that the discipline claims, quite correctly, to have a heritage in Peircean sign theory because his signs operate beyond the relatively limited scope of language and culture. But it was also suggested that biosemiotics displays certain constructivist and phenomenological characteristics which may sit uncomfortably with Peirce who rejects the notion of ‘interpretation’ as a fundamental feature of semiotic meaning making.

In this context, it is useful to revisit some of the key aspects of biosemiotic theory and reconsider them in the light of our recent discussions. Specifically, it is beneficial to re-appraise the biosemiotic notions of the *Umwelt* and the ‘lower semiotic threshold’. If the Hegelian influences on Peirce are fully acknowledged, how does this inform understanding of these two issues?

In a passage from Barbieri, quoted earlier, he identified that there are two main traditions of meaning making within biosemiotic theory. One of these he defined as ‘interpretative’ (and, he claims, Peircean) and the other he saw as founded on ‘code biology’ (Barbieri 2009). But it is now possible to identify a third way in which meaning is created and which follows a Hegelian template. This involves the organism creating an *Umwelt* through the activity of positing an ‘object of thought’ and then refining it through indexical connections. These emergent semiotic identities have meaning, and they are formed neither through interpretation, nor through codes. Peirce can thus avoid the phenomenological and constructivist tendencies sometimes evident in biosemiotics. Moreover, these

emergent identities are formed by individual organisms themselves. They do not depend on an animal being able to ‘decode’ species-specific signs.

This new way of understanding meaning making creates considerable opportunities for the biosemiotic discipline. In many biosemiotic theories, the *Umwelt* is constructed using sensory inputs provided by the physical world and it remains relative to these inputs. In this approach, as discussed above, a degree of dualism is still likely to be retained. But if a more Hegelian construal of Peirce is adopted the *Umwelt* is no longer so constrained. For the universe is no longer the semiotic outcome of species-specific interpretations of certain experiences; rather, the very physicality of the universe, itself, is now established in the *Umwelt* through the interaction of the organism (as it forms icons) and reality (through secondness). The resulting signs are not interpretations; they are mediating *synthetic* creations involving the mind and reality. It follows that any potential division (or relativity) that may exist between physical reality and the *Umwelt* is abolished. The latter is now reframed as the world *itself* rather than an interpretative construction placed upon it by the organism. As such, a more far-reaching account of the *Umwelt* can be suggested for the biosemiotic discipline. In the human sphere, for example, even the molecules, electrons and atoms of the physical sciences are emergent ‘objects of thought’. Through scientific experimentation, these putative identities garner indexical linkages, become ‘thirds’, and have become embedded in physical laws.

This analysis of Peircean meaning making also has implications for the biosemiotic debate on the lower and upper ‘semiotic thresholds’ (Eco 1976: 19–21). In particular, the idea of a lower semiotic threshold has been a contentious issue for biosemioticians (Rodríguez Higuera 2019) for it questions the extent to which the plant and animal kingdoms construe their own worlds. As noted earlier, Hoffmeyer asserts, stretching the notion of interpretation to almost breaking point, that even cells ‘interpret’ their environment (Hoffmeyer 1996: 95). In line with this, Stjernfelt (2014: 145) suggests that *E. coli* can ‘read’ the presence of sugar:

Thus, when the *E. coli* reads the perimeter of the carbohydrate molecule, its subsequent orientated swimming counts as the behavioural proof that a Dicsign combining the abstract shape of the active site with a here-and-now presence of such a site has been processed by the bacterium.

Such positions, however, equate sign formation with the idea of interpretation and suggest that cells perform anthropomorphic activities. But if a more Hegelian account of Peirce is adopted, then the questions of whether such a threshold exists, and where it should be placed, are easier to address. Peirce would have argued that a lower semiotic threshold *does* exist, but he would have maintained that it is *not* established by interpretation. Instead, he would have argued that it

is determined by the capacity of an organism to posit an ‘object of thought’. It is this specific semiotic ability that initiates meaning making. Importantly, Peirce would also have observed that this activity is distinct from an ability to produce ‘perceptual judgments. On this basis, and extending our discussion in section 5.3, it is possible to distinguish three kinds of cognitive interaction with the world:

1. **Basic Sensations** – the purely physical effects of light, heat etc impacting on the sense receptors of an organism (with no ‘interpretation’, or sign formation, has taken place). This is the level of Peircean percepts and ‘firstness’ where no specific identity has been given to a sensation. As Alva Noë observes, “to perceive is not merely to have sensory stimulation. It is to have sensory stimulation which one understands” (Noë 2004: 181). ‘Basic sensations’ are thus sensory stimulations *without* such understanding.
2. **Perceptual Judgments** – in which an organism experiences *something as something*. This involves recognition that a particular sense datum is similar to others, and it is the member of a potential class.
3. **Sign Formation** – whereby an organism experiences something *as something else* (through the activity of positing of an ‘object of thought’ which, as a potential new identity, can later evolve into a ‘genuine sign’).<sup>44</sup>

Holding these three distinctions in view, it is possible to demarcate a potential division between ‘perceptual judgments’ and the activity of sign formation itself (e.g., between levels two and three). For these two cognitive activities, previously grouped together under the general heading of ‘interpretation’, can now be distinguished from each other. Returning to Stjernfelt’s example, it is possible, for example, to reappraise the *E. coli* swimming towards the sugar. The bacterium can sense the sugar *as* a source of food, (e.g., as a ‘perceptual judgement’) rather than the beginnings of sign formation (3). The sugar is simply something ‘positive’ that the *E. coli* recognises and wants to get closer to. In the plant kingdom, flowers, likewise, turn towards the sunlight *as* a source of energy. But what is highly unlikely is that either the *E. coli*, or the flowers, are capable of positing

---

<sup>44</sup> This construal of signhood differs from that of Eco. He insists that a key characteristic of the sign is its ability to ‘stand for something else’, but the way in which Eco defines this is in entirely cultural terms. He states in ‘*A Theory of Semiotics*’ (Eco 1976: 16): ‘I propose to define as a sign *everything* that, on the grounds of a previously established social convention, can be taken as *something standing for something else*’. So, Eco, whilst agreeing with Peirce that signs ‘stand for something else’ retains his social perspective *contra* the more cognitive and individualistic stance of Peirce. At the heart of the matter is a fundamental difference on what ‘stands for’ means. For Eco, it involves an interpretation being imposed on a sense datum; for Peirce, in contrast, it means that an interpretant translates a representamen through sublation.

(e.g., hypothesising) an ‘object of thought’. In contrast, many ‘higher’ organisms can do this. For example, a swan will approach a person on a riverbank because it sees them as a source of bread. The swan can form an ‘object of thought’; the individual on the bank is the *kind* of being (e.g., an icon) which often carries bread (an index) and so the person on the riverbank becomes a *sign* of food. This is different to the scenario with the *E. coli*. For the swan does not directly perceive the bread in the way that the *E. coli* perceives the sugar. In the case of the swan, the person ‘stands for something else’ and is thus a *sign* of bread. This is meaning making in the true semiotic sense.

This revised analysis also has consequences for the ‘upper semiotic threshold’. This is defined by Eco in terms of interpretation. He argues that when semioticians think about objects in purely physical (e.g., non-semiotic) terms, they should no longer be treated as cultural objects because they are *beyond* interpretation. A ‘space’ is, therefore, hypothesised by Eco in between the two thresholds. This is where interpretation is thought to operate – above the point where it becomes intellectually possible and below the point where interpretation is replaced by ‘hard’ facts. As Nöth points out (Nöth 2000: 50):

Possible non-semiotic perspectives from which our cultural objects can then be considered are thus the physical, the mechanical, the economic, and the social perspectives, and these, according to Eco, are the perspectives from beyond the upper semiotic threshold.

But these demarcations can be challenged in the context of Peircean sign formation. If the intellect’s understanding of the physical world *itself* begins with posited ‘objects of thought’, which become symbols and the components of physical laws, then it follows that *even the physical world* itself falls within the realm of biosemiotics. The ‘upper semiotic threshold’ is thus effectively abolished. The discipline is no longer confined to the limited remit of human, or animal, interpretation. Its scope extends to the entirety of the synthetic universe. Peirce states that humans are in a universe made up of signs and that we are “immersed in signs” (CP5: 289). This is the direct result of the intellect’s ability to create a synthetic world of signs – not from its ability to interpret the physical world. Arran Gare suggests that “biosemiotics is at the centre of this struggle to overcome Cartesian Dualism and to overcome the rift between science and the humanities” (Gare 2019: 90). Abolishing the ‘upper semiotic threshold’ represents a major step in this direction.

In conclusion, and in line with the tenets of biosemiotic theory, organisms do, indeed, form their own *Umwelt*. But this concept can now be established on a revised basis: an organism’s ability to posit ‘objects of thought’. This is different from the view that organisms belong to a particular species and have, as a result, access to species-specific ‘codes’, or the suggestion that they interpret their

environment. In contrast, Peirce offers a new way of establishing the *Umwelt* which provides a revised platform for the 'lower semiotic threshold'. Moreover, this revised Peircean account also challenges Eco's claims regarding the existence of an upper semiotic threshold. There is no physical world of 'hard facts' outside of semiotics because the entire universe (including its physicality) consists of mediating signs.<sup>45</sup>

---

<sup>45</sup> Pattee argues that the problem of dualism is implicit in any discussion of the interface between physics and biology. He argues that "the problem is that any concept of *subject* or *self* implies the existence of an *object* or *non-self*. For physics the relation of subject to object has always been the fundamental problem" (Pattee 2015: 460–467). In this context, he suggests that dualism can be reframed as a distinction between symbols and matter which is determined by what he calls the 'epistemic cut' (Pattee 2001: 5–21). He argues that the belief that there are such things as isolated objective 'facts' rests on the erroneous belief that, when a phenomenon is measured, it is possible to isolate the act of measuring from the phenomenon itself. Pattee rightly claims this is not possible. For example, an attempt to measure a temperature, will always involve the physical effects of the measuring devices used (Pattee 2015: 460–467).

The problem of the 'epistemic cut' derives, of course, from the model of 'secondary dualism'. It is only by assuming that the identity of a particular sense datum is *known* that the physical sciences can make a claim that it is an isolated 'hard' fact. Pattee agrees with Peirce that it is not possible to do this – everything is connected in experience. Pattee's discussion of temperature measurement, therefore, illustrates Peirce's point that 'objects of thought' are relationally connected. Pattee also argues that symbols can overcome the 'epistemic cut' because their separation from matter is an illusion (Pattee 2001: 5–21). This, again, is broadly correct. But his interpretation of symbols is still some distance from Peirce. Pattee still claims that symbols are formed through interpretation and codes. He states that "symbols exist only in the context of codes and interpreters" (Pattee 2007: 11). This terminology does not reflect Peirce's claim that symbols are mediating, and synthetic, 'objects of thought'.

## 12 Vygotsky on concept formation

In previous chapters, our discussion has focused on Peirce's account of sign formation as it is influenced by Hegelian philosophy. It has been suggested that Peirce construes his own 'natural history of the sign' as a succession of sign types combining with each other to form a genuine sign (a 'third'). This semiotic evolution is determined by his three categories interacting with the three elements of the sign. Peirce thus outlines how putative identities are initially formed by the mind, how they develop their indexical links, and how they are finally sublated into symbols. In the third trichotomy, these symbols (now in the form of rhemes) are used to create propositions and arguments to describe the world.

Vygotsky's own account of concept formation is, in many respects, much simpler than that of Peirce. He does not seek to establish an account of how the mind achieves synthetic knowledge at an epistemological level; as a psychologist, he simply wants to explain how children develop their own concepts. As a result, the scope of Vygotsky's work is somewhat narrower than Peirce's. But, as observed earlier, it is relatively easy to view Vygotsky's work through a twentieth century lens which privileges social constructivist ways of thinking and underplays its Hegelian aspects. One of the purposes of this chapter is to further illustrate how Hegelian influences also run through Vygotskian thought and bring them to the fore. In chapters three and seven, consideration was given to Vygotsky's accounts of perception, dialecticism, and mediation and it was suggested that these should be considered in a more Hegelian context. In this current chapter, the Vygotskian stages of concept formation, itself, are detailed. This analysis will reveal further convergences between Vygotsky and Peirce which will confirm their shared heritage in Hegel and will also draw Peirce into the mainstream of educational learning theory where Vygotsky is so well established.

### 12.1 The 'natural history of the sign'

Vygotsky describes the process of concept formation as a "natural history of the sign" (Vygotsky 1978: 46). Following Hegel, he believes that concepts evolve through a series of qualitative transformations. These create, as Linask observes, "one single line of ontogeny" (Linask 2019: 300). Vygotsky argues, however, that there are several distinct stages in this process, and it is important to evaluate how these determine a child's concepts. As already noted, the mediating entities created through this activity are the units of analysis which Vygotsky calls 'word

meanings'. They are formed by two 'lines of development' combining with each other (Vygotsky 1978: 46):

*Within a general process of development, two qualitatively different lines of development, differing in origin, can be distinguished: the elementary processes, which are of biological origin, on the one hand, and higher psychological functions, of sociocultural origin, on the other. The history of child behaviour is born from the interweaving of these two lines. The history of the development of the higher psychological functions is impossible without a study of their prehistory, their biological roots, and their organic disposition.*

Vygotsky emphasises that these 'lines of development' exist alongside each other; one never dominates the other. In other words, 'word meanings' never entirely replace natural 'spontaneous concepts'; rather they emerge from them. Vygotsky confirms this when he states that (Vygotsky 1994: 163):

*Further, we believe that psychological analysis, penetrating beyond the external manifestation of phenomena and revealing the inner structure of psychological processes and, particularly, the analysis of the development of higher forms, compels us to acknowledge the unity, but not the identity, of higher and lower psychological functions.*

It has already been observed that, for Vygotsky, adult 'words' help the child pick out particular identities from the confusion of 'natural perception'. But concept formation is not as straightforward as this. In a clear parallel with Hegelian thought, Vygotsky divides this evolutionary activity into "three basic phases" (Vygotsky 2012: 117) with still smaller stages contained within them. These three main stages are:

- 'Unorganised congeries', or 'heaps'
- Complexes (of which there are several kinds)
- Concepts

Vygotsky outlines the process of concept formation in several of his writings. In this analysis, the focus will be mainly on the account given in *'Thought and Language'* (Vygotsky: 2012).

In the first phase of concept formation, the child identifies basic groups of objects (Vygotsky 2012: 117–118):

The young child takes the first step toward concept formation when he puts together a number of objects in an *unorganised congeries*, or 'heap', in order to solve a problem that we adults would normally solve by forming a new concept. The heap, consisting of disparate objects grouped together without any basis, reveals a diffuse, undirected extension of the meaning of the sign (artificial word) to inherently unrelated objects linked by chance in the child's perception. At that stage, word meaning denotes nothing more to the child than



a *vague syncretic conglomeration of individual objects* that have somehow or other coalesced into an image in his mind. Because of its syncretic origin, that image is highly unstable.

This passage echoes the Hegelian description of undifferentiated 'Being'. There is no rational organisation in the way that the child groups objects, because only 'natural perception' is involved. The language that Vygotsky employs here is also rich in Peircean parallels; Vygotsky's "heaps" equate to Peircean 'vagues'. Indeed, Peirce, himself, even uses the terminology of "non-relative congeries" at one point in his writings (CP5: 493). In addition, Vygotsky's terminology, when he describes "a vague syncretic conglomeration of individual objects", reflects Peirce's synechism.

The second stage of Vygotskian concept formation is more complicated and involves what he calls 'complexes'. He makes several sub-divisions within this second stage which reflect the ways in which a complex may correlate with reality. Vygotsky maintains that "in a complex, individual objects are united in the child's mind not only by his subjective impressions but also by *bonds actually existing between these objects*. This is a new achievement, an ascent to a much higher level" (Vygotsky 2012: 120). These bonds establish potential connections between objects, but in a 'complex' these linkages are not abstracted; they remain firmly rooted in the factual domain. Vygotsky, for example, insists that "in a complex, the bonds between its components are *concrete and factual* rather than abstract and logical, just as we do not classify a person as belonging to the Petrov family because of any logical relation between him and other bearers of the name. The question is settled for us by facts" (Vygotsky 2012: 120–121).

Because of the various ways in which a child classifies objects, Vygotsky identifies five ways in which a 'complex' can be formed. Although only one of these types is described as associative, Vygotsky views them all as possessing associative (or contiguous) features (Vygotsky 1994: 219). Interestingly, in these definitions, it is possible to observe a small departure from Hegel. Vygotsky views the different complexes as being formed by a unification of previously *separate* elements. To this extent, some level of perceptual 'atomism' has crept into Vygotsky's account. Objects are being treated as separate entities and are not being viewed as part of a perceptual continuum requiring further determination. As such, Vygotsky sees the child building its complexes from a series of atomised entities; he does not assume, as Hegel and Peirce do, that the child starts with a single experience of 'Being'. However, the first four initial complexes are as follows:

- **Associative Complexes** – based on the weakest of links being established – "It may be based on any bond the child notices between the sample object and some other blocks" (Vygotsky 2012: 121).

- **Collection Complexes** – based upon functional links of what goes with what: “Experience teaches the child certain forms of functional grouping: cup, saucer, and spoon; a place setting of knife, fork, spoon and plate; the set of clothes he wears” (Vygotsky 2012: 123).
- **Chain Complexes** – “a dynamic, consecutive joining together of individual links into a single chain, with meaning carried over from one link to the next” (Vygotsky 2012: 123). This complex type demonstrates a key attribute of complexes – “An object included because of one of its attributes enters the complex not just as the carrier of that one trait but as an individual with *all* its attributes” (Vygotsky 2012: 124). This is one of the key differences between complexes and concepts.
- **Diffuse Complexes** – these are created by the child because they think that “attributes are sometimes considered similar, not because a genuine likeness, but because of a dim impression that they have something in common . . . . The diffuse complex is marked by the fluidity of the very attribute that unites its single elements. Perceptually concrete groups of objects or images are formed by means of diffuse, indeterminate bonds” (Vygotsky 2012: 125–126).

For Vygotsky, the main characteristic of these complexes is that they are based on ‘association’. In many ways, these ‘complexes’ correspond, therefore, to the indexical stage in Peircean thought as empirical links begin to be created. However, at this point, another feature of Peirce’s model should be highlighted through its very absence. There appears, in this Vygotskian account, to be no equivalent of the Peircean ‘icon’ in his treatment of concept formation; there is no initiating ‘form’ at the beginning of the process. The child is simply making associative connections between objects. This is undoubtedly because these objects are already viewed, by Vygotsky, as possessing their own identities – even though ‘indeterminacy’ is mentioned in Vygotsky’s account regarding ‘diffuse complexes’.

There is, additionally, a fifth type of complex which Vygotsky calls the ‘pseudoconcept’. This is the final type of ‘complex’ before a genuine concept is formed. However, the ‘pseudoconcept’ appears, to an outside observer as if it is a concept. Vygotsky asserts that “we call this type of complex the *pseudoconcept* because the generalisation formed in the child’s mind, although phenotypically resembling the adult concept, is psychologically very different from the concept proper; in its essence, it is still a complex” (Vygotsky 2012: 127). What makes the ‘pseudoconcept’ appear to be a concept is the fact that a word has now been borrowed from others. The child is able to articulate this received word, but the underlying concept (or ‘word meaning’) has yet to be formed. But it is clear, at this point, that ‘outer speech’ is now playing a role in concept formation; the child is

going beyond their own associative classifications. The 'pseudoconcept' is differentiated from the other 'complexes' as follows (Vygotsky 2012: 129):

Adults, through their verbal communication with the child, are able to predetermine the path of the development of generalisations and its final point – a fully formed concept. But the adult cannot pass on to the child his mode of thinking. He merely supplies the ready-made meanings of the words, around which the child builds complexes. Such complexes are nothing but pseudoconcepts. They are similar to concepts in their appearance, but differ substantially in their essence.

With the emergence of the 'pseudoconcept', however, the developmental process now introduces the previously missing, and critical, idea of *form* into Vygotskian concept formation. It is of note, for example, in the passage above, that a 'word' is now able to "predetermine the path of the development of generalisations". To quote Fonseca earlier, the Vygotskian word now 'structures the knowing power'. Another key characteristic of the 'pseudoconcept' is that abstraction also begins to take place at this point. A single, or few, aspects of the complex are 'picked out' by the child to stand for all the properties of the incipient concept (Vygotsky 2012: 144):

Complex thinking begins the unification of scattered impressions; by organising discrete elements of experience into groups, it creates a basis for later generalisations. But the advanced concept presupposes more than unification. To form such a concept, it is necessary to *abstract*, to *single out* elements, and to view the abstracted elements apart from the totality of the concrete experience in which they are embedded. In genuine concept formation, it is equally important to unite and to separate: Synthesis and analysis presuppose each other as inhalation presupposes exhalation.

And this corresponds with Hegel's insistence that (Hegel 2014: 138):

Or, rather, abstraction is the imposition of this Identity of form, the transformation of something inherently concrete into this form of elementary simplicity. And this may be done in two ways. Either we may neglect a part of the multiple features which are found in the concrete thing (by what is called analysis) and select only one of them; or, neglecting their variety, we may concentrate the multiple features into one.

However, the activity of abstraction ("the imposition of this identity of form") is still fraught with potential difficulties for the child. Inevitably, he or she will not always make correct 'choices' when choosing which defining features to adopt. This means that the 'pseudoconcept' is like a Hegelian Essence; it is inherently unstable, and it contains contradictions (Vygotsky 1994: 229):

So, our analysis led us to the conclusion that an internal contradiction is present in the pseudoconcept, the most widespread concrete form of thinking in complexes in children, which is imprinted on its very name and which, on the one hand, is the greatest problem

and obstacle we face in our attempts to investigate it from the scientific point of view, and on the other, underlines its enormous functional and genetic significance as the most important determining factor in the process of development of thinking in children.

This explains why Vygotsky still views the ‘pseudoconcept’ as simply a stepping-stone towards a child’s potential concepts (Vygotsky 2012: 148):

But as long as complex thinking predominates, the abstracted trait is unstable, has no privileged position, and easily yields its temporary dominance other traits. In potential concepts proper, a trait once abstracted is not easily lost again among the other traits. The concrete totality of traits has been destroyed through its abstraction, and the possibility of unifying the traits on a different basis opens up. Only the mastery of abstraction, combined with advanced complex thinking enables the child to progress to the formation of genuine concepts.

However, the most important aspect of the ‘pseudoconcept’ is that the child is using the word of an adult, or peer, in concept formation. As a result, the ‘pseudoconcept’ represents an important bridge between the ‘complex’ and the concept. It marks the point where a ‘word meaning’ begins to be formed.

Vygotsky is recognised, by almost all commentators, as emphasising the social dimension in concept formation. As noted earlier, many interpret him as proposing that meanings are socially constructed and then ‘interiorized’ by the child. But it is now possible to identify an alternative role for the social dimension. The speech of others provides the child (when confronted with an emerging ‘complex’) with a *form* for a potential concept. The social dimension, by providing a ‘word’, thus enables the child to discover a potential pathway for an emergent concept. In Hegel, and Peirce, the intellect itself performs this task – by positing a Hegelian Essence, or a Peircean icon. In Vygotsky’s dialectical psychology, in contrast, the ‘words’ of other people provide these critical forms. It is evident, therefore, that whilst the social dimension does provide an essential ingredient for Vygotsky, it does not deliver fully formed concepts, *in toto*. As noted earlier, Bruner raises the issue of ‘interiorization’ for Vygotsky, but a solution is now possible. Commentators are mistaken if they assume that Vygotsky’s emphasis on the ‘word’ suggests that complete concepts are given to a child through language. Instead, the role of the social dimension is narrower and more specific – to provide a potential form for the emerging concept.

Of course, it could be suggested that this argument amounts to hair-splitting. If the key element required for the concept comes from the social dimension, doesn’t this mean that concepts are social, after all? However, the fact that one element of the concept (the ‘form’) stems from ‘outer speech’ does not mean that concepts are, themselves, created within the social sphere. But commentators, such as Bakhurst, still conclude that “it is an enduring theme of Vygotsky’s

writings that the higher mental functions are social in origin. Their development cannot be portrayed as the outcome of biological maturation, but essentially involves the child's appropriation of culture" (Bakhurst 2011: 153). It is precisely this view that the child is involved in an "appropriation of culture" that is misguided here. Just because the social dimension represents a reservoir of forms, this does not mean that a child appropriates a culture *in toto*. All that Vygotsky is suggesting is that culture represents a repository of potential pathways for the child's internal concept formation. There is no need to invoke social 'activity', 'negotiation', or 'participation' to explain this process.

Vygotsky also argues, quoting Hegel himself, that concept development involves a form of qualitative change (Vygotsky 1997b: 39):

About its quality, we can say, in the words of Hegel, that something is what it is because of its quality, and losing its quality, it ceases being what it is, for the development of behaviour from animal to man resulted in the appearance of a new quality. This is our main idea. This development is not exhausted by a simple increased complexity of those relations between stimuli and responses which were already presented to us in animal psychology. Neither does it proceed along the path of quantitative increase and branching of these relations. At its centre is a dialectical leap that leads to a qualitative change in the relation between the stimulus and the response.

This passage corresponds to Hegel's discussion of the relationship between quality and quantity in the *Science of Logic* (Hegel 2014: 100–123). And Vygotsky's mention of a 'dialectical leap' clearly references Hegel's notion of 'sublation'. Earlier, it was noted that the Peircean interpretant involves the creation of a new identity in a similar way; it establishes a new identity which stands for something other than itself. Vygotsky reflects this same convergence with Hegel when he states, "but in this highest form of behaviour the habits which participate in an intellectual operation and form part of the structure have already become a 'superseded category'" (Vygotsky 1997a: 188).

In addition to this, the Vygotskian concept displays other characteristics which are now familiar to our discussion. In Peircean semiotics, when an 'object of thought is posited, the mind raises the saliency of some of its perceptual elements and reduces those of others. For Vygotsky, when a concept starts to be formed, the child likewise moves beyond 'natural perception' and creates something new (Vygotsky: 2012: 145):

Still, the global character of the child's perception has been breached. An object's attributes have been divided into two parts unequally attended to – a beginning of positive and negative abstraction. An object no longer enters a complex *in toto*, with all its attributes – some are denied admission; if the object is impoverished thereby, the attributes that caused its inclusion in the complex acquire a sharper relief in the child's thinking.

However, as with Hegel, Vygotsky is careful to emphasise what this involves. He does not adopt a Lockean account of abstraction whereby the mind identifies certain similarities and forms a general term on that basis. Instead, abstraction, for Vygotsky, involves the interaction of the two lines of thought. In the translation of *'Thought and Language'* in *'The Collected Works of Vygotsky'*, Vygotsky describes this process as follows (and note his mention of a mediating “middle level concept”) (Vygotsky 1987: 162):

On the contrary, the child uses the most general concepts from the very beginning. He reaches the middle level concept not through abstraction, not by moving from below to above, but through definitions, by moving from higher to lower. The child's representations move from the undifferentiated, from genus to species and variety.

Interestingly, this more detailed account of abstraction is missing from the Kozulin translation of *'Thought and Language'* and represents an important omission because abstraction, for Vygotsky, involves a concept becoming established, through qualification, in a network of other concepts (Vygotsky 1987: 162):

Rather than involving a simple isolation of similar features from a series of concrete objects, the process of concept formation came to be understood as *a complex process involving the movement of thinking through the pyramid of concepts*, a process involving constant movement from the general to the particular and from the particular to the general.

Within the “pyramid of concepts”, the child can identify what is contained (and what is not contained) within a particular concept and, in addition, how each concept may fit within a wider system of other concepts. This reflects the Hegelian description of abstraction discussed earlier. The child establishes which ideas are more general, more specific, and which are positioned within a pyramid as a subset of others.

Another feature of the concept which Vygotsky highlights is its ‘instrumental’ role. He states that a genuine concept becomes a “main instrument of thought” (Vygotsky 2012: 148). As such, it parallels the Peircean sign which makes “inefficient relations efficient” (SS: 31). Vygotsky, for example, argues that “on the contrary, the very difference between the complex and the concept lies in the different functional uses of the word. The word is a sign, and as such it may be used in different ways depending on what kind of intellectual operation it is involved in” (Vygotsky 2012: 149). This, of course, also reflects Vygotsky's contention that signs are ‘tools’. But no physical manifestation of a tool is involved here. The concept, itself, is a semiotic ‘instrument’ because it facilitates greater understanding of the world.

In the development of the Peircean sign, it was observed that symbols contain indexical components. It was also highlighted, however, that, for Vygotsky,

these indexical associations are present in complexes, *before* a 'word' (or form) is borrowed from 'outer speech'. As a result of this, Vygotsky clearly possesses no equivalent of Peircean secondness and, by emphasising 'dialectical psychology', he follows Hegel more faithfully than Peirce. In this context, Vygotsky tends, instead, to focus on memory as the mechanism which enables a child to include various 'indexical' properties within its concepts. In *'Mind in Society'*, he argues (Vygotsky 1978: 36):

The possibility of combining elements of the past and present visual fields (for instance, tool and goal) in one field of attention leads in turn to a basic reconstruction of another vital function, *memory*. Through verbal formulations of past situations and activities, the child frees himself from the limitations of direct recall; he succeeds in synthesizing the past and the present to suit his purposes. The changes that occur in memory are similar to those that occur in the child's perceptual field where centres of gravity are shifted and figure and ground relationship are altered. The child's memory not only makes fragments of the past more available, but also results in a *new method of uniting the elements of past experience with the present*. Created with the help of speech, the time field for action extends both forward and backward. Future activity that can be included in an ongoing activity is represented by signs.

In the emerging concept, therefore, Vygotsky insists that experiences in memory become included within a 'word meaning' and their 'indexical' inclusions stretch forwards and backwards.<sup>46</sup> These elements form the indexical contents of a concept and the connections between concepts. Vygotsky states, in a formulation which could have been written by Peirce himself, that "a real concept is an image of an objective thing in all its complexity. Only when we recognise the thing in all its connections and relations, only when this diversity is synthesised in a word, in an integral image through a multitude of determinations, do we develop a concept" (Vygotsky 1998: 53).

Because the Vygotskian concept is not taken, *in toto*, from adults, an important effect of this is that a child's newly formed concept will always be different, in key respects, from the adult concept. There will always, as a result, be a 'gap' between the child's new concept and the received 'word'. This is because the personal experiences (e.g., 'natural perceptions') that a child uses in concept formation will always be different from those of the adult. Vygotsky states, for example, when talking about 'paths', that (Vygotsky 1994: 228):

The speech of the people surrounding the child, with its established, constant meanings, predetermines the path which the development of the child's generalisations can take. It

---

<sup>46</sup> Vygotsky's mention of memory as a mechanism providing a child with evidence of the future activity of an object echoes Peirce's pragmatism. This doctrine asserts that concepts provide knowledge of how objects will behave in the future based on previous experience.



limits the child's individual actions and directs them down specific, strictly defined channels. But the child, whilst travelling along this defined predetermined path, continues to think in ways peculiar to the stage of development of intellect where he happens to be at that time. By engaging the child in verbal communication, an adult can influence the further progress of this generalisation process, as well as the end and outcome of that journey which will be the result of the child's generalisations. But adults cannot pass on their method of thinking to children. A child assimilates ready-made meanings of words from adults, but he does not have to select actual themes for the complexes himself.

The words of adults and peers, therefore, offer "strictly defined channels" for concept development, but they do not "pass on" pre-formed meanings. The words of others only provide an indicative 'pathway' for concept development.

In this chapter, it has been highlighted that Vygotsky's 'natural history of the sign' displays certain parallels, and some important differences, when compared with Peirce. The most notable of these, perhaps, is that Vygotsky does not utilise an equivalent of the Peircean icon at the *initial* stage of a concept's development. Instead, the notion of 'form' only enters, at a later stage, with the 'word' of others. This final stage in concept formation reflects the 'sublation' that occurs when, to use Peirce's terminology, a 'third' is created. The fact that the 'word' delivers this 'form' gives the social dimension an important role in concept formation, but this is quite different from that attributed by commentators who wish to enrol Vygotsky in their social constructivist fold.

## 12.2 The zone of proximal development

Vygotsky's Zone of Proximal Development (ZPD) has attracted much attention in the literature, and it has informed the notion of 'scaffolding' in educational theory. The various interpretations of the ZPD in the literature have been wide-ranging and they have been applied to child psychology in several ways. In an educational context, the focus of commentators has been placed, not surprisingly, on the ZPD's potential utility in the classroom – both as a means of conceptualising child attainment and as a way for thinking about the learning process itself. In this section, however, the ZPD will be considered in a new way; it will be evaluated through the lens of Peircean sign theory. What role does the Vygotskian ZPD play in this revised context, and does it have an equivalent in Peircean thought?

Many commentators view the ZPD as a metaphorical 'space', or 'gap', which exists between the child's learning ability, as an individual, and their enhanced ability with the help of another person (usually a teacher, but also a peer). In Vygotsky's writings on the ZPD, this position seems to be well supported. For example, Vygotsky (1978: 86) defines the ZPD as:



This difference between twelve and eight, or between nine and eight, is what we call *the zone of proximal development*. It is the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers.

On this basis, the ZPD seems to offer the opportunity to explore how a child's underlying potential can be brought to the surface. It is this which has led to the idea of 'scaffolding' (Wood, Bruner, and Ross: 1976), and this, in turn, has spawned numerous educational studies evaluating how the ZPD enhances the learning process (an example would be Moll's use of the ZPD in teaching bilingualism (Moll 2014)). Linked to this, there has also been a tendency to interpret Vygotsky's mention of "distance" as suggesting that the ZPD can be used to measure a child's development – as if there were two objective attainment levels contained within it.

But the most important aspect of the ZPD, highlighted in many interpretations, has been, unsurprisingly, its social aspect. In some cases, the Zone of Proximal Development has even been interpreted as a "zone" in a physical sense and related to the classroom environment. In these construals, the ZPD "has to do with the manner in which we arrange the environment such that a child can reach higher or more abstract ground from which to reflect, ground on which he is enabled to be more conscious" (Moll 2014: 24). Newman and Holzman, likewise, suggest the "ZPD is not a technique, or an experiment, but a reorganizing of environmental scenes to create new meaning and a learning that leads development" (Newman and Holzman 1993: 147). Elsewhere, Bruner argues that the ZPD is, essentially, the learning context created by the teacher. He claims that "the tutor, in effect, performs the critical function of 'scaffolding' the learning task to make it possible for the child, in Vygotsky's word, to internalize external knowledge and convert it into a tool for conscious control" (Bruner 1985: 25).

Other writers have referenced Vygotsky's ZPD to highlight the need for learning 'partners' (Gauvin 2001: 35):

According to Vygotsky, higher mental functions have their origins in human social life as children interact with more experienced members of their community. This process involves a child as an active participant working with a more competent partner to solve a problem. To facilitate children's participation and learning, more experienced partners target their assistance to a child's *zone of proximal development* . . .

And Stables suggests that "Vygotsky believed that the cognitive gap between child and parent, or student and teacher, was a zone of 'proximal development' or potential growth, and the quality of interaction across this gap would determine whether the child could reach the next level of mental operations" (Stables

2008: 107). Other commentators, however, have pointed out that Vygotsky does not necessarily include current interpersonal activity in the ZPD. Daniels (2016: 64), for example, asserts that the ZPD can operate in the *absence* of an adult or peer and some commentators insist that, even if a teacher is not present at the time, they have been there in the past (in a classroom setting). In this interpretation, the child develops their concepts in the ZPD using previously received help. In all these construals, the social aspects of the ZPD are placed centre stage and they, again, reflect social constructivist accounts of concept formation. As Miller wryly observes, this transforms the ZPD into “a kind of magical learning-teaching capsule” (Miller 2011: 122).

One of the assumptions of these more social interpretations is that the ZPD involves communication. And once the ZPD has been construed within a communication model, other problems arise. For it follows, as Bruner noted above, that advocates of this view must explain how ‘interiorisation’ takes place. It is useful to revisit this issue because it highlights specific misconceptions about the ZPD.

When discussing concept formation, commentators often note Vygotsky’s use of the term ‘imitation’. This suggests a form of ‘copying’ that enables a child to create their own concepts. On occasions, this view does, indeed, seem to be supported by Vygotsky himself (Vygotsky 2012: 199):

In the child’s development, on the contrary, imitation and instruction play a major role. They bring out the specifically human qualities of the mind and lead the child to new developmental levels. In learning to speak, as in learning school subjects, imitation is indispensable. What the child can do in cooperation today he can do alone tomorrow.

But there are difficulties if this passage is taken at face value. Vygotsky is not claiming that ‘imitation’ is the same as ‘copying’. Miller, for example, notes that Vygotsky “identifies imitation as the underlying process but points out that a particular kind of imitation is involved that is not based on a blind mechanical kind of copying” (Miller 2011: 120). So, the question is this: what kind of ‘imitation’ occurs in the ZPD? Miller himself believes that Vygotsky does not resolve this specific question satisfactorily. Criticising Vygotsky, he concludes that (Miller 2011:153):

But how the human instructional kind of imitation differs from the mechanical copying kind of imitation and what it consists of or what additional processes are involved in its operation, as distinct from the outcomes produced, are matters that are not directly addressed. This is not a mere oversight but represents a significant theoretical gap at the heart of his [Vygotsky’s] account of instruction and development.

Miller’s conclusion, however, overlooks Vygotsky’s adherence to Hegelian dialecticism and the idea of ‘positing’. These Hegelian themes offer a potential

answer to these attacks on Vygotsky. For if the social dimension is viewed, as proposed above, as a source of potential ‘forms’, then it is possible to entirely reframe the notion of ‘imitation’. It is evident that “mechanical copying” is not required in concept formation if all that is transferred to the child is a ‘form’, or ‘pathway’, in the shape of a word. These pathways are, indeed, ‘imitations’ of the adult concept, but they still remain individual to the child. Newman and Holzman come very close to this position when they state that “imitation in the ZPD is the activity of making meaning, where the predetermining tools of the adult language, and the resulting predetermined tools of the mind are used by the child – the toolmaker – to create something that is not determined by them” (Newman and Holzman 1993: 87).

And this analysis also has important consequences for the activity of concept formation over time. If all that is provided by ‘outer speech’ are potential ‘forms’, then it follows that the child still retains significant control over elements of a particular concept (through their ‘natural perceptions’). And because the experiences of each individual, or each generation, are very different to each other, it follows that their concepts will reflect their own empirical experiences. For example, the concept of ‘communication’ will be very different for a child brought up in the 1970’s compared with a child born in the twenty-first century.

Vygotsky’s treatment of the ZPD also suggests that the notion has important applications beyond the learning environment. These additional uses of the concept further undermine the argument that the word ‘zone’ should be taken literally. In particular, Vygotsky highlights the ZPD in relation to ‘play’ (Vygotsky 1978: 102):

This strict subordination to rules is quite impossible in life, but in play it does become possible: thus, play creates a zone of proximal development of the child. In play a child always behaves beyond his average age, above his daily behaviour; in play it is as though he were a head taller than himself. As in the focus of a magnifying glass, play contains all developmental tendencies in a condensed form and is itself a major source of development.

This specific aspect of the ZPD deserves attention because it reveals much more about Vygotsky’s view of the concept. Why should play create a ZPD? And what has a ZPD to do with a “subordination to rules”? In *Mind in Society*, Vygotsky suggests that play “seems to be invented at the point when the child begins to experience unrealizable tendencies” (Vygotsky 1978: 93). And he goes on to state that:

To resolve this tension, the pre-school child enters an imaginary, illusory world in which the unrealisable desires can be realised, and this world is what we call play. Imagination is a new psychological process for the child; it is not present in the consciousness of the very young child, is totally absent in animals, and represents a specifically human form of conscious activity.

Interestingly, this account of ‘play’ is also described by Vygotsky in terms of ‘rules’ (Vygotsky 1978: 94):

One could go even further and propose that there is no such thing as play without rules. The imaginary situation of any form of play already contains rules of behaviour, although it may not be a game with formulated rules laid down in advance. The child imagines himself to be the mother and the doll to be the child, so he must obey the rules of maternal behaviour. Sully early noted that, remarkably, young children could make the play situation and reality coincide. He described a case where two sisters, aged five and seven, said to each other, ‘Let’s play sisters’. They were playing at reality.

In “playing at reality”, Vygotsky proposes that a child “operates with meanings detached from their usual objects and actions” (Vygotsky 1978: 98). Sticks, for example, are now transformed by the child’s imagination into horses. In such scenarios, the normal relationships between objects and meanings are effectively inverted; meanings now create rules for objects. Vygotsky goes on to argue that “what was said about detaching meaning from objects applies equally well to the child’s own actions. A child who stamps on the ground and imagines herself riding a horse has thereby inverted the action/meaning ratio to meaning/action” (Vygotsky 1978: 100).

This is precisely why play is “rule bound”. The meanings of words (or forms) now define, through their rules of inclusion (and exclusion), how an object *ought* to behave in a game. For Vygotsky, this critical aspect of play is how a child discovers what is included (and not included) in a particular concept. The ZPD is, therefore, where form and content work out their dialectical relationships with each other. As a result, Vygotsky claims that “a child’s greatest self-control occurs in play” (Vygotsky 1978: 99) and he concludes that “this strict subordination to rules is quite impossible in life, but in play it does become possible: thus, play creates a zone of proximal development of the child” (Vygotsky 1978: 102).

A ZPD is thus created when a child plays within a set of ‘rules’ which are determined by the meanings of his or her concepts. This is a purely internal activity for the child, and it can be carried out alone; it does not require a social context. When the child is ‘being a horse’ or ‘being a mother’ they submit themselves to the ‘rules’ of their conceptual game and the meanings of the objects they are imagining. In this activity, they are exploring the entailments (and the boundaries) of specific identities. The notions of ‘horse’ and ‘mother’ have come from the words of others, but the child is able to work with them alone.

Earlier in this essay, the flawed relationship between ‘form’ and ‘content’ in the template of ‘secondary dualism’ were discussed. It was noted that, in the conventional model, experiential content comes first, and form is imposed upon it by the intellect. It was also emphasised that Hegel and Peirce reject this nominalist

approach and argue that the relationship between form and content can also work in the reverse direction; form can also define content. In Vygotsky's account of child play, he adopts this same perspective. As the child plays, they employ forms, provided by received words, to work out what content is included, or not included, within a potential concept.

Overall, therefore, Vygotsky lacks some of Peirce's terminology, but many of the same features are present in his account of concept formation. In Peirce, the icon is initially posited, and the indexical entailments of a concept are included, before being sublated into a symbol. In Vygotsky's account, in contrast, the 'indexical' components of the concept are already present in the initial 'complexes' identified by the child. These are then 'raised up' to the level of a genuine concept, in a dialectical 'leap', by using a 'word' borrowed from the 'outer speech' of adults or peers. In other words, the latter imposes 'form' onto content at the end of the dialectical process. Indeed, Vygotsky's references Tolstoy to support this view when he states that "the truth of this theory, according to Tolstoy's own words, lies in the fact that almost always it is not the word itself which is unintelligible, but that the pupil lacks the concept which would be capable of expressing this word. The word is almost always available when the concept is ready" (Vygotsky 1994: 357). As was noted with Peirce, an 'object of thought' needs to reside beneath a symbol for meaning to be created. A symbol alone can never have meaning.

There are also similarities between Peirce and Vygotsky with respect to the role they give to the imagination. Earlier, it was observed that the creation of the Peircean icon involves this faculty and this was traced back to Kant. But in Vygotsky's account of play, something equally creative occurs in the ZPD. The child *imagines* being a 'mother' or riding a 'horse'. Vygotsky does not adopt the terminology of icon, but the imagination of the child is critical when form is being imposed on content. Further references to the imagination in the ZPD can also be found in Vygotsky's discussion of creativity in the adolescent (Vygotsky 1998: 151–167). Here, 'fantasy' is discussed in ways that echo 'play' amongst younger children. Vygotsky points out that the imagination and thinking are often mistakenly separated from each other when, in fact, the imagination is vital in creating new concepts. And Vygotsky agrees with Peirce that it is through the creation of higher-level concepts that the mind can escape the dyadic mechanisms intrinsic to stimulus/response thinking. Vygotsky suggests that "this can be understood as follows: thinking that is purely concrete, completely devoid of concepts, is also without fantasy. The formation of concepts brings with it, first of all, liberation from the concrete situation and the possibility of creativity re-processing and changing its elements (Vygotsky 1998: 163).

This section has highlighted that it is possible to revise our understanding of the Vygotskian ZPD; it should be reframed within a perspective which is

more Hegelian in character. By loosening the hold of modern social constructivist accounts on Vygotsky, the ZPD can be repositioned as an interface where a child's concepts are formed, as 'word meanings', in an 'amalgam' of spontaneous concepts and the adult inputs from outer speech. As such, it can be suggested that the ZPD represents the location where the Vygotskian sublation takes place. Social constructivist interpretations tend to ignore this Hegelian influence and, therefore, misunderstand Vygotsky's belief that the ZPD is, in fact, where the intricate relationships between form and content are resolved.

---

## Part Four: **Peirce: The implications of semiotic concept formation**





## 13 Pragmatism, truth and abduction

In this penultimate chapter, several of the consequences of Peirce's model of concept formation are explored in greater detail. These will underpin the revised interpretation of Peirce advanced in this essay by indicating how his semiotics resonates with other parts of his thought. Whilst being acknowledged as one of the founding fathers of semiotics, Peirce was also an innovator in several other philosophical areas. In particular, he advanced the doctrine of pragmatism and the form of mental inference known as abduction. There is significant literature on both subjects, and this chapter will not attempt to evaluate them in detail. However, there is benefit in considering how our understanding of these topics can be enhanced by the foregoing analysis of Peircean sign theory. Commentators often discuss pragmatism and abduction in ways that are separate from Peirce's semiotics. But this obscures their fundamentally semiotic origins. By demonstrating that both his pragmatism and his theory of abduction are founded in his sign theory, an understanding of how, and why, Peirce innovated in these areas can be elucidated.

### 13.1 Concept formation and pragmatism

In an essay on the influence of Peirce on educational theory, Houser (1987) quotes Percy making the following observation (Percy 1972: 160):

Charles Peirce was an unlucky man. His most important ideas ran counter to the intellectual currents of his day, were embraced by his friends – and turned into something else. William James took one idea and turned it into pragmatism which, whatever its value, is not the same as Peirce's pragmatism. Peirce's triadic theory has been duly saluted by latter-day semioticians – and turned into a trivial instance of learning theory . . . Freud was lucky. The times were ready for him, and he had good enemies. It's our friends we should beware of.

The ways in which Peirce's theory of signs has been misconstrued in the secondary literature have already been explored in this essay. These are, arguably, what Percy is referring to when he suggests that Peirce's sign theory has often been turned into a "trivial instance of learning theory". But Percy also claims that James took Peirce's pragmatism and turned it into something else. It is important to assess the validity of this claim and to elucidate Peirce's intentions regarding his pragmatism. Percy's claim is, in fact, justified; a similar fate befell his philosophical doctrine. In this case, however, Peirce was much more

aware of contemporary misinterpretations, and he adopted the term “pragmatism”, as cited above, as a means of distancing himself from James’s account.

Peirce’s pragmatism is often viewed as a major theme in his later philosophy and as something absent from his earlier writings. It is of some significance, in this context, to find that Peirce acknowledges that this aspect of his philosophy has links with Hegel. It is worth highlighting that neither Peirce, nor James, were the first to use the term ‘pragmatic’. James suggests that it was first used by Peirce in 1878 in *‘How to Make Our Ideas Clear’* (EP1: 124–141; James 1908: 46), but the term can be found, in Hegel’s discussion of ‘great men’, when he argues that “a man is what he does” (Hegel 2014: 166). These Hegelian roots have also been acknowledged by other commentators (Nagl 2014: 429–435; Bernstein 2013: 105–123; Emundts 2015: 611–663) confirming another aspect of Hegel’s influence on Peirce. And within Peirce’s own work, he even acknowledges his debt. On one occasion, Peirce states (EP2: 345):

The truth is that pragmatism is closely allied to the Hegelian absolute idealism, from which, however, it is sundered by its vigorous denial that the third category (which Hegel degrades to a mere stage of thinking) suffices to make the world, or is even so much as self-sufficient. Had Hegel, instead of regarding the first two stages with his smile of contempt, held on to them as independent or distinct elements of the triune Reality, pragmatists might have looked up to him as the great vindicator of their truth.

To understand Peirce’s pragmatism, and how it differs from pragmatism, it is essential to begin with Peirce’s own formulation of it. Perhaps the clearest expression of his ‘Pragmatic Maxim’ can be found in his lecture of 1903 (EP2: 135):

Consider what effects that might conceivably have practical bearings we conceive the object of our conception to have: then, our conception of those effects is the whole of our conceptions of the object.

This passage is usually interpreted as a statement about the “effects” of an object upon a perceiver. Thus, commentators conclude that the maxim concerns the *consequences* and the *future anticipated behaviours* of an object and its practical effects. There are numerous examples of this interpretation in the secondary literature. Here are several, beginning with James’s own:

The pragmatic method in such cases is to try to interpret each notion by tracing its respective practical consequences. What difference would it practically make to any one if this notion rather than that notion were true? (James 1908: 45).

Pragmatism, the philosophical doctrine that the meaning of any conception consists in how that conception may affect behaviour (with behaviour broadly construed to include thinking) (Houser 1987: 255).

We can only know what a word or concept means, Peirce asserted, based on its effect upon the conduct of human behaviour (Chiasson 2002: 11).

The ‘cash value’ of a word or concept was for them [pragmatists] the difference it made in life and action. No difference in life, no difference in meaning (Davis 1972: 88).

These quotations clearly illustrate this emphasis on ‘effects’ in the literature. It is certainly true that this is an important constituent of Peirce’s own maxim, but this should not lead to the conclusion that this is all the maxim is about. As Peirce points out “it must be admitted, in the first place, that if pragmatism really made Doing to be the Be-all and the End-all of life, that would be its death” (EP2: 341).

In contrast, for Peirce, the most important part of the maxim can be found in the last line of his formulation where Peirce highlights the importance of the “whole of our conceptions of the object”. This is so critical to Peirce that, in his essay *‘What Pragmatism Is’*, he emphasises this part of his definition, in obvious frustration, using capital letters. He states: “Then your conception of those effects is the WHOLE of your conception of the object” (EP2: 338). With emphasis now placed on the term ‘whole’, the maxim attracts quite a different meaning. Its subject matter is effectively reversed; it becomes a proposition concerning what it is to be a “whole conception”. This transforms the maxim into a philosophical doctrine about the nature, and structure, of concepts, rather than one concerning how particular practical ‘effects’ inform a meaning for an individual.

James’s version of the pragmatic maxim, however, ignores Peirce’s emphasis on the ‘whole conception’ and, instead, gives it a strong psychological slant. James is primarily concerned with how practical effects inform the meaning of an object *to* someone. But this move has major consequences. In his lecture, *‘What Pragmatism Means’*, James re-states the maxim in his own terms. Superficially, it appears very similar to Peirce’s formulation, but it is entirely different in its underlying import (James 1908: 46–47):

Mr. Peirce, after pointing out that our beliefs are really rules for action, said that, to develop a thought’s meaning, we need only determine what conduct it is fitted to produce: that conduct is *for us* its sole significance . . . . . To attain perfect clearness in our thoughts of an object, then, we need only consider what conceivable effects of a practical kind the object may involve – what sensations we are to expect from it, and what reactions we must prepare. Our conception of these effects, whether immediate or remote, is then *for us* the whole of our conception of the object, so far as that conception has positive significance at all [my italics].

This new version of the maxim includes most of Peirce’s formulation and James even mentions the ‘whole of our conception’. But he limits the scope of the maxim by insisting, twice in this passage, that what is important is how a concept is conceived “for us”. With this new emphasis, James effectively psychologises

the maxim. It ceases to be a theory about the nature of concepts themselves; it becomes a thesis about the way meanings are formed for individuals. James, of course, still maintains that his version of the maxim remains a “doctrine of truth” (Dea 2014: 478), but he has, in effect, reduced it to a theory of *subjective* truth and meaning. To reinforce this, James even claims, on one occasion, that the maxim can be used to justify the truth content of religious beliefs because of the intrinsic benefits they have for individuals and society. He claims that pragmatism is “interested in no conclusions but those which our minds and our experiences work out together, she has no *a priori* prejudices against theology. *If theological ideas prove to have a value for concrete life, they will be true, for pragmatism, in the sense of being good for so much*” (James 1908: 72–73).

In James’s hands, therefore, the pragmatic maxim ceases to focus on the character of a ‘whole conception’. Rather, it is a psychological theory regarding how meaning is made on the basis of practical utility (Misak 2013 54–57; Apel 1981: 5). Turrise (1997: 29) makes this distinction clear:

Peirce regarded the practical skill of using pragmatic technique as valuable, but not in any great need of elucidation. By contrast, readers of William James’s works prior to 1903 were treated almost exclusively to descriptions of pragmatic skills and techniques implying its value for practical action. Justifications of pragmatism even later in James’s works – for example in his 1907 Lowell lectures on pragmatism – are made in terms of its usefulness, under the presumption that practical utility is its own best defence. [. . .] The direction of pragmatic studies typified by James’s work – which was not grounded on any greater justification than efficacy – convinced Peirce that pragmatism had gone too far without its necessary *logical* justification.

James’s version, therefore, involves a relativisation of the pragmatic maxim and this has influenced philosophers later in the twentieth century. Rorty, for example, views modern accounts of pragmatism as follows: “my first characterization of pragmatism is that it is simply anti-essentialism applied to notions like ‘truth’, ‘knowledge’ language’, ‘morality’, and similar objects of philosophical theorizing” (Rorty 1982: 162). Rorty does criticise such interpretations, but he concludes, in his own version of neo-pragmatism, that it should be defined in social terms (Rorty 1982: 165–166):

Let me sum up by offering a third and final characterisation pragmatism: it is the doctrine that there are no constraints on inquiry save conversational ones – no wholesale constraints derived from the nature of the objects, or of the mind, or of language, but only those retail constraints provided by the remarks of our fellow inquirers . . . . There is no method for knowing *when* one has reached the truth, or when one is closer to it than before.

Such interpretations of the pragmatic maxim, however, are far from Peirce’s own intentions. His version of pragmatism is concerned with what it is for a

concept to mean something, and he believes that this must involve the *sum* of what is contained within its “whole conception”. In this construal, the concept includes all the ‘effects’ of a thing (or an event), but his focus remains resolutely on the concept itself viewed from all possible perspectives – not on how a particular meaning might be construed by an individual.

This way of thinking about concepts is, of course, something that we have already encountered. Indeed, Peirce’s semiotic theory characterises the concept as an evolving identity with indexical elements (or ‘effects’) included in it. In *‘How to Make Our Ideas Clear’*, in 1878, Peirce states, referring to a concept (EP1: 131):

To develop its meaning, we have, therefore, simply to determine what habits it produces, for what a thing means is simply what habits it involves. Now, the identity of a habit depends on how it might lead us to act, not merely under such circumstances as are likely to arise, *but under such as might possibly occur, no matter how improbable they may be* [my italics].

The sum of possible indices (in all future contexts) determines, therefore, the meaning of a concept. Peirce specifically includes all possible relationships with the world and not just those observed so far. This view places Peirce’s pragmatic maxim firmly in the philosophical tradition of Leibniz’s monads and his endeavours to establish ‘real definitions’. And by defining the pragmatic maxim in this manner, it is evident that Peirce positions it alongside his sign theory. The second trichotomy of his sign classification is where new identities gather indexical relationships with the world. By means of this semiotic activity a ‘whole conception’ slowly gathers shape. Peirce’s semiotics and his pragmatism are, therefore, closely aligned.

This conclusion is supported when Peirce discusses the meaning of terms. For example, he states that “we can consequently mean nothing by wine but what has certain effects, direct or indirect, upon our senses; and to talk of something as having all the sensible characters of wine, yet being in reality blood, is senseless jargon” (EP1: 131). The ‘effects’ present in his pragmatic theory are the accrued indices of Peirce’s sign theory. This point is also highlighted by Romanini, who observes that “since symbols must embody both indices and icons to produce reasoning, pragmatism should be considered a corollary of his semeiotic” (Romanini 2014: 216).

Because the notion of identity is implicated in concept formation, it is evident that the pragmatic maxim must work, as symbols do, at the level of universals. Hookway, for instance, highlights that the maxim does not apply to singularities – such as whether Caesar “sneezed three times on the morning he first crossed to England” (Hookway 2004: 147). Peirce makes this point himself, insisting that the maxim can only speak of ‘general kinds’ (CP5: 426). And Peirce, as noted, also

maintains that when a claim is made that diamonds are ‘hard’, this is, in fact, a statement about a *class* of objects. It may be the case that the next diamond encountered is ‘soft’, and a revision of the initial belief may be required, but this will either lead to a conclusion that the original definition of diamonds is wrong (an unlikely outcome), or that a new sub-category of ‘soft’ diamonds should be created (because of the action of Peircean secondness). In this interplay of form and content, the pragmatic ‘truth’ that ‘ordinary’ diamonds are ‘hard’ would still be preserved.

Commentators also highlight, and rightly so, the role of context in the operations of pragmatic maxim. But care should be taken with this notion. An emphasis on context can easily slip into an account where meaning itself derives from context. Such a shift, however, inverts the maxim once more. Hookway, for example, suggests that “a full understanding of the pragmatist maxim probably requires an understanding of our cognitive contexts, of the sorts of information we should take account of in reflecting about the consequences of our actions in different possible circumstances” (Hookway 2012: 10). At one level, this is correct, but pragmatists should not conclude that pragmatism is a study of how identities change when placed in particular contexts. For Peirce, it is the other way around. Contexts (past, present, and future) are, in fact, what defines the ‘whole conception’. It is these endless possibilities in a relational universe – not context itself – that determine the nature of meaning.

In summary, Peirce’s pragmatic maxim is often interpreted in ways that subvert Peirce’s original intentions. His doctrine can become a way of construing meaning creation at an individual level. This renders his maxim both relativistic and contextual. But in his own form of pragmatism, Peirce proposes an account of how meaning is established, *on a relational basis*, within a structure of concepts. Peirce argues that it is the summation of effects, or indices, that determines the meaning of a ‘whole conception’. The purpose of Peirce’s pragmatic maxim is, therefore, to demonstrate how the meaning of a concept includes potential contexts which are never actualised. It is not to articulate how meaning is determined for an individual.

It should also be emphasised that this relativisation of Peirce’s maxim has contributed, to some extent, in the rupture that has emerged between his pragmatism and his semiotics. But if it is accepted that Peirce, within his ‘speculative grammar’, is providing an account of concept formation, then it becomes evident that these two aspects of his thought are closely related. As Rosenthal rightly observes “his pragmatic theory of meaning would seem to be part and parcel of his semiotics” (Rosenthal 1990: 195).

## 13.2 Peirce's concept of truth

If Peirce's pragmatic maxim is properly understood as defining meaning in terms of the *whole* of a conception, then this clearly has important consequences for his concept of truth. Because he maintains that the meaning of a concept is determined by the indices that it includes, this allows Peirce to propose an account of truth that (re)unites analytic and synthetic versions of it. These are conventionally separated by philosophers who argue that synthetic truths are contingent, and refer to the external world, whilst analytic truths are so by virtue of the meanings of their terms.

In many ways, Peirce's account of truth parallels that of Leibniz. It makes sense, therefore, to begin with the latter's exposition. As highlighted, Peirce's synthetic model of the world echoes the Leibnizian web of inter-related monads. These are identities (not things) and they are defined by the sum of their relationships with each other. Leibniz ([1714] 1951: 523–524) thus describes their monadic interaction as follows:

And as, because the world is a *plenum*, everything is connected and each body acts upon every other body, more or less, according to the distance, and by reaction is itself affected thereby, it follows that each monad is a living mirror, or endowed with internal activity, representative according to its point of view of the universe, and as regulated as the universe itself.

Peirce is fully aware of this Leibnizian perspective. Indeed, his pupil, John Dewey echoes this account, in his book on Leibniz, when he states that “the monad is an individual, but its whole content, its objectivity or reality, is the summation of the universe which it represents” (Dewey 1888: 57). This Leibnizian framework means that each monad relates to the universe in a way that uniquely defines it. Semiotically, this comprises the unity of the identity and its indexical relationships. As outlined earlier, this Leibnizian formulation foreshadows Peirce's pragmatism.

Working within this relational model, human knowledge grows through several stages. In Leibnizian terms, the mind moves from ‘clear ideas’ (that simply indicate that it has recognised an identity), to ‘distinct ideas’ (where the mind knows the differentiating indexical relations of these identities). Finally, the intellect aspires to ‘perfect ideas’ (which, in most cases, are known only by God). As observed, this evolution echoes Leibniz's ascension from ‘nominal definitions’ to ‘real definitions’ – a trajectory which also informs Peirce's ‘immediate’ and ‘dynamic’ objects. And it follows from this philosophical perspective that truth is always partial – a particular truth can never reflect full knowledge of an identity because this would entail knowing all its relationships with the world. As Peirce states (CP5: 565):

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 the error of 3.14159, the value given for  $\pi$ , will indefinitely diminish as the calculation is carried to more and more decimal places.

In this relational universe, the human mind learns, therefore, by degrees. This clearly has implications for any concept of truth. It suggests that any account of truth must accommodate the conclusion that concepts *contain* indexical content. And this is precisely the view found in Leibniz. In a letter to Arnauld, he states (Leibniz 1686/1989: 337):

It is that always, in every true affirmative proposition, whether necessary or contingent, universal or particular, the notion of the predicate is in some way included in that of the subject. *Praedicatum inest subjecto* [predicates are contained within their subject]; otherwise I do not know what truth is.

This Leibnizian definition of truth resonates with Peirce's pragmatic maxim. Leibniz is effectively suggesting that what is contained within a concept (e.g., its predicates, or its pragmatic 'effects') will ultimately determine what that concept means. For Peirce, therefore, establishing a truth involves understanding the predicates that an identity contains. This convergence between Peirce and Leibniz is seldom noticed in the secondary literature. Bellucci's article on Leibniz (Bellucci: 2013) is, however, a notable exception to this. He claims that "Peirce's original formulation of the pragmatist principle has its roots in Leibniz's theory of cognition" (Bellucci 2013: 339). And he also highlights that Peirce (MS: 649) talks of "pragmatic adequacy" – thereby referencing the notion of 'adequate ideas' in Spinoza and Leibniz.

To the modern mind, however, Leibniz's account of truth seems deeply flawed. He seems to be suggesting that propositions about the world are 'analytic' and yet they also assert empirical truths. But Leibniz is writing almost a century before Kant established his distinction between synthetic and analytic truths. To the modern reader, Leibniz seems to be proposing that empirical statements are merely tautologies, but what he is really advancing is a way of construing truth that transcends (or rather pre-dates) Kant's distinction.<sup>47</sup>

---

<sup>47</sup> This pre-Kantian belief in the mind's ability to combine analytic and synthetic truths is also present in the work of Maimon. In his *Essay on Transcendental Philosophy*, he suggests that concepts are formed synthetically, but they are employed analytically. Using the term 'determinations' in the same manner as Peirce, he states (Maimon [1790] 2010: 53):

The understanding's procedure in forming [*Bildung*] concepts is opposed to its procedure in judging. In the former case it acts synthetically, but in the latter analytically. In



In Peirce's account of concept formation, and in his pragmatic maxim, a position can be discerned that equates to Leibniz's stance. Peircean concepts are initiated as putative identities (icons), they accrue connections with the world (indices), and they are encapsulated in symbols. At this higher level, they are incorporated into wider structures with other symbols, forming systems which, themselves, are internally coherent. Peircean semiotics, therefore, possesses the requisite elements for a formulation of truth that combines both empirical foundations and internal (analytic) consistency. This is possible because the meanings of terms are not arbitrarily created through interpretation or codes (as they would be in 'secondary dualism'). Instead, they have been fashioned by previous empirical experience and the continuous actions of secondness. This is why Forster (Forster 2011: 161–166) and Almeder (Almeder 1985: 89) argue that Peirce combines coherence and correspondence theories of truth.<sup>48</sup>

In addition to this Leibnizian influence on Peirce, the intermediary figure of Hegel must also be considered. The latter claims that synthetic truths are formed through a fusion of empirical experience and reason. Hegel proposes, as noted, that "what is reasonable is actual; and what is actual is reasonable" (Hegel 2014: 5) and this is echoed in Peirce's notion of "concrete reasonableness" (CP5: 3). Hegel, therefore, argues that his dialectical approach results in a framework "where Notion corresponds to object and object to Notion" (Hegel 1977: 51). This convergence, again, fuses the modern concepts of analytic and synthetic truth. Winfield highlights this point when discussing Hegel's account of truth (Winfield 2006: 30):

This enables the ensuing movement [dialecticism] to be analytic and synthetic at once. As in logic's self-thinking of thought, here each advance is synthetic by presenting something not already contained in what precedes it, yet analytic insofar as it provides nothing that is not contained within the whole that is in the process of determining itself.

---

forming concepts, it starts from the universal and achieves the particular by means of determinations; on the other hand, in judgments it is the reverse: it thinks the particular first, and then subsumes it under the universal by omitting determinations; as a result, the terms subject and predicate must be exchanged in the two cases.

**48** It is of note that Peirce does not believe that a 'correspondence' theory of truth would be enough, on its own, to provide a foundation for a concept of truth. This is because truth must amount to more than an *incidental* correspondence between propositions and reality. Peirce argues, for example: "That truth is the correspondence of a representation with its object is, as Kant says, merely the nominal definition of it" (EP2: 379).

And Houlgate also concurs with Winfield's view (Houlgate 2005: 38):

Hegelian logic is 'analytic' to the extent that it merely renders explicit what is implicit or unthought in an initial category. However, by explicating the indeterminate category of being, we do not merely restate in different words what is obviously 'contained' in it, we watch a new category emerge. It is this transformation of categories into new categories which *prevents* the development of Hegel's logic being straightforwardly analytic.

Interestingly, this Hegelian account of truth also has parallels, in the twentieth century, in Quine's *Two Dogmas of Empiricism* (Quine: 1951). In this well-known paper, Quine argues that it is not possible to draw a distinction between analytic and synthetic truth and he criticises this Kantian division as "an unempirical dogma of empiricists, a metaphysical article of faith" (Quine 1951: 34). He maintains that it is based on the erroneous conviction that the mind knows the identity of its sense data – a familiar tenet of 'secondary dualism'. It is this 'article of faith' which leads to the mistaken conclusion that analytic truths are possible because of the meanings of their terms. Quine correctly argues that this results in a "cleavage between the analytic and the synthetic" (Quine 1951: 38).

This Peircean account of truth does not mean, of course, that empirical statements are always true. As highlighted earlier (figure 1), it is important to distinguish between the way concepts are formed and how they are subsequently used in propositions. Although human concepts are fashioned by experience, it does not follow that they are fool proof in their application and Peirce's belief in 'fallibilism' highlights the importance of secondness. It is this category that throws up 'surprises' and means that human concepts remain contingent. In this respect, Peirce describes human knowledge in the following manner (CP5: 589):

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

However, in contrast to the mediating concept of truth proposed here, Forster suggests that Peirce also adheres to a "consensus theory of truth" (Forster 2011: 167–170). It is worth exploring this aspect of Peircean truth because it illuminates other features of his position. Peirce certainly talks on occasions of a "community of inquirers" (EP1: 54), and he also agrees that human discourse helps the growth of knowledge. But it should be questioned whether Peirce completely adopts a "consensus theory of truth"; the belief that truth is a matter of what a community agrees upon.

As discussed, Peirce certainly values social discourse as a means of refining human concepts, but he stops well short of claiming that social agreement

makes something true. This would slip into a form of social constructivism. Indeed, for Peirce, matters are the other way around. Interactions with other people represent an additional layer of secondness which helps determine (and thereby limit) the meanings of previously formed symbols. As a result, Peirce does not believe that propositions are true because we agree about them. Instead, he inverts the constructivist platform and argues that they are true because we *can't disagree* about them. Peirce explains this position as follows (EP1: 52):

The real, then, is that which, sooner or later, information and reasoning would finally result in, and which is therefore independent of the vagaries of me and you. Thus, 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.

Here, Peirce's emphasis on a "community" appears to suggest that truth is formed through social agreement. But Peirce is proposing that a "community of inquirers" is useful because, in fact, it ensures a more effective grasp of what a particular 'object of thought' entails. This happens because a larger number of people will bring more perspectives to bear on a particular subject matter. True knowledge (and 'the real') is established, therefore, *despite* "the vagaries of me and you". Many inquirers are not beneficial because they form a greater consensus; they are useful because they afford more opportunities for a *lack* of consensus (e.g., a lack of secondness). Lane, in his account of Peirce's realism (Lane 2018: 35–36), concurs with this point:

A true belief is the satisfying state of mind that practitioners of the method of science will experience if they apply that method until no further application will cause any change in what they believe.

And Lane quotes Peirce, who claims that "the real is the idea in which the community settles down" (CP6: 610).

This section should also conclude with a brief discussion of how Peirce's concept of truth displays parallels with the philosophy of Kripke. The latter also proposes that 'necessary' truths about the world are possible. Kripke asks, in *Naming and Necessity*, whether the proposition that "gold is a yellow metal is necessary" (Kripke 1980: 123) and, likewise, "is it a necessary or a contingent property of gold that it has the atomic number 79?". Kripke answers that this must be the case simply because this is *what it is to be gold* (Kripke 1980: 125):

Given that gold is this element, any other substance, even though it looks like gold and is found in the very places where we in fact find gold, would not be gold. It would be some other substance which was a counterfeit for gold. In any counterfactual situation where the same geographical areas were filled with such a substance, they would not have been filled with gold. They would have been filled with something else. So, if this consideration is

right, it tends to show that such statements representing scientific discoveries about what this stuff *is* are not contingent truths, but necessary truths in the strictest possible sense.

Kripke reaches his conclusion because he proposes a new platform for truth. Certain truths, for Kripke, are not applied to *things*. In cases of ‘rigid designation’, identities (or ‘natural kinds’ (Kripke 1980: 116–129)) contain predicates which are included in their concept. Short (2007: 264) highlights that there are potential links between this Kripkean idea of ‘rigid designation’ and Peirce’s account of ‘hypostatic abstraction’, because the latter creates ‘placeholders’ which are empty, but which are open to indexical characterisation.<sup>49</sup> Short argues (Short 2007: 278) that:

We see, then, that terms for natural kinds designate rigidly. Their reference is fixed by the actual, if unknown, nature of the exemplars in relation to which we have learned to use them. As with proper names there is, in Putnam’s words, an ‘indexical component’ in our use of natural kind terms. Water, he says, ‘is stuff that bears a certain similarity relation to the water *around here*’.”

However, this capacity to assert that an identity (e.g., ‘stuff’) exists, *even though we do not know what it consists of*, can also be seen in the workings of Peircean icon. As was noted earlier, the icon also creates an identity which is later filled out with indices. Kripke shares this perspective in his account of ‘gold’. It is an empty ‘placeholder’ which is subsequently filled out with indexical properties. This way of thinking about ‘gold’ as a ‘natural kind’ renders its properties, through ‘rigid designation’, necessary rather than contingent. And Peirce’s account of the concept of wine (cited in section 13.1) foreshadows this approach.

Unfortunately, Kripke then goes on to suggest that the identity of gold must have been ‘fixed’ through some prior naming process. As such, the concept of gold becomes, for Kripke, a socially constructed definition (Kripke 1980: 95):

In general, our reference depends not just on what we think ourselves, but on other people in the community, the history of how the name reached one, and things like that. It is by following such a history that one gets to a reference.

---

<sup>49</sup> Short (2007: 268) argues that Peirce’s account of ‘hypostatic abstraction’ allows him to introduce a new object into an analysis. It takes a predicate and turns it into a potential ‘object of thought’. Peirce’s favourite example is Moliere’s play where the doctor says that opium has a ‘dormitive virtue’. In this case, the cause of sleepiness is not, *itself*, identified. But it is still recognised as existing as a potential identity that causes sleep. Peirce states that “this operation of hypostatic abstraction is not quite utterly futile. For it does say that there is *some* peculiarity in the opium to which sleep must be due; and this is not suggested in merely saying that opium puts people to sleep.” (CP5: 534). This identity is not yet known, but exists as a potential placeholder.

Kripke concludes, therefore, that “rigid designators” are fixed by a community. In contrast, for Peirce, it is the combination of icons and indices which enable the mind to ‘fix’ the content of an ‘object of thought’ and therefore give it meaning.

Leaving this Kripkean byway aside, however, the ‘positing’ of a potential identity, through an icon, appears to create a ‘placeholder’ (without any initial empirical qualities). This enables Peirce to bridge the dualisms between the experiential and the intellectual, the empirical and the conceptual, and it is this which enables him to establish his own concept of truth. Hegel performs this delicate task through his notion of Essences. Peirce achieves the same outcome using ‘objects of thought’ in the sign, whilst Vygotsky utilises the terminology of ‘word meaning’. These notions enable all three thinkers to establish an account of human knowledge based on mediating concepts which are universally applicable and yet still empirically contingent.

### 13.3 Abduction

Peirce was also innovative in relation to his notion of abduction (or ‘hypothesis’, or ‘retroduction’, as he calls it earlier in his career). His insistence that abduction is a form of *logical* inference is well known and remains controversial. Moreover, like his pragmatism, his abduction also appears, at first sight, to be quite separate from his semiotics. It belongs, it can be argued, to the philosophy of science rather than to a discipline that is focused on signs. In a lecture in 1903, however, Peirce overtly links his theory of abduction to his pragmatism (EP2: 226–241). Given that Peirce’s pragmatism has already been drawn closer to his sign theory, it is useful to explore whether his account of semiotic concept formation also elucidates his position on abduction.

Commentators sometimes view Peirce’s notion of abduction as amounting to little more than the assertion that making a hypothesis is an important stage in scientific discovery. And there are many examples, given by Peirce, which would tend to confirm this view. In these accounts, abduction is construed as an initial stage in any inquiry where a potential solution to an empirical problem is hypothesised (Harris and Hoover 1980: 339). Liszka, for example, cites several examples of abduction. These include Copernicus’s hypothesis about a heliocentric solar system, continental drift theory, and the diagnosing hospital patients (Liszka 1996: 64–68). Liszka maintains that “abduction begins with a certain anomaly, an anomaly that is generated when certain observed phenomena do not fit into a standard of received pattern of reasoning or hypothesis” (Liszka 1996: 65). Likewise, Misak suggests that an abduction is involved when “a hypothesis or a conjecture is identified that explains some surprising experience – some strange

exception. Consequences are then deduced from this hypothesis and are tested by induction” (Misak 2013: 48).<sup>50</sup>

Cooke expands this account by suggesting that abduction is part of Peirce’s wider model of experience. She argues that secondness, in the form of ‘surprises’, is able to “constrain our abductions”. She correctly identifies that abduction is related to the Peircean category of firstness, but she concludes that abduction is simply part of a general perspective in which assumptions about reality are always open to question. As a result, she concludes that “experience teaches us through trial and error” (Cooke 2014: 329) and she believes that Peirce may have influenced Popper “who regards scientific progress as a series of conjectures and refutations” (Cooke 2014: 329).

But these evaluations both underplay the importance of abduction for Peirce and its potentially radical role within human cognition. Peirce was far too great a philosopher to have simply suggested that the mind forms hypotheses. Indeed, Peirce seeks to demonstrate that abduction is a form of *logical* inference that places it alongside deduction and induction (Burks 1946: 301–306; Harris and Hoover 1980: 331). This is a far stronger assertion for Peirce to make and it is one that is certainly more controversial. His claim must be explored, therefore, to establish whether any connection may exist between abduction and Peirce’s theory of concept formation.

The idea of ‘hypothesis’ enters Peircean thought at a number of levels. At the basic level of experience, ‘perceptual judgments’ are described by Peirce as hypotheses and, as such, they form the very beginnings of empirical knowledge. Peirce argues that (EP2: 227):

Abductive inference shades into perceptual judgment without any sharp line of demarcation between them; or in other words our first premisses, the perceptual judgments, are to be regarded as an extreme case of abductive inferences, from which they differ in being absolutely beyond criticism. The abductive suggestion comes to us like a flash. It is an act of *insight*, although of extremely fallible insight.

Additionally, when a sign is first initiated, it has been suggested that the Peircean icon should be viewed as a hypothesis based on conjectured similarity, or what Peirce also calls “colligation” (EP2: 22; EP2: 46). In the case of both

---

**50** Misak notes that “Peirce is silent about Hume’s problem of induction” (Misak 2013: 48). She ascribes this to the fact that induction is only a problem “if you are looking for certainty” (Misak 2013: 49) and that “Peirce is not interested in showing that induction delivers us certainty” (Misak 2013: 49). But, as noted earlier, Peirce also rejects the atomisation of perceptions. This is a key requirement for induction to become a philosophical problem because it severs the potential links between perceptions. It is largely because Peirce rejects such mistaken atomisation that he views Hume’s problem of induction as not warranting consideration.

‘perceptual judgments’ and icons, therefore, abduction is closely related to firstness. This is the Peircean category of ‘possibility’ where the imagination plays an active role in sign formation. When talking about hypothetical inference, Peirce describes it in terms that overtly reference this quality of firstness. He states, for example, that “hypothetic inference” involves “a single *feeling* of greater intensity [my italics]” (EP1: 198–199).

But what is also fundamental to Peirce’s notion of abduction is that it has a logical character. At first glance, this is at odds with Peirce’s suggestion that abduction concerns feelings and the imagination. Turrise (1990: 495) captures this apparent paradox. Describing Peircean abduction, she says that “his concept of a logic of creativity has been the source of a persistent controversy. Is it not the case, many critics have said, that creativity is a psychological and not a logical affair?”. Many commentators, such as Frankfurt (1958: 593–597), have also argued that Peirce is mistaken in making claims about abduction’s logical status. Others, such as Tschaepe, have, in contrast, argued that this feature of abduction is, after all, simply a matter of reasoning: “For Peirce, it makes perfect sense to speak of a logic of guessing because guessing is a reasoning process through which ideas are deliberately created and initially selected or dismissed” (Tschaepe 2014:122).

But Peirce claims more than that abduction is simply rational and, in his defence, it has been observed that there is a particular notion at the heart of his semiotics – that of identity. Using this insight, it is possible to bring into view the logical character of abduction. In our earlier evaluation of Peirce’s concept of truth, it was noted that predicates are included within an identity. It makes sense, therefore, to consider the inferential activity of abduction in this philosophical context. Simply put, it can be argued that Peircean abduction is a form of *logical* inference because it involves hypotheses derived from a known identity.

To understand this point more fully, some of Peirce’s examples of abduction should be highlighted. One of the best known is the case of the white beans. He argues (EP1: 188) that abduction represents the following kind of logical inference under the heading of “hypothesis:”

*Rule:* All the beans from this bag are white

*Result:* These beans are white

*Case:* These beans are from this bag

And Peirce goes on to say (EP1: 189) that:

Hypothesis is where we find some very curious circumstance, which would be explained by the supposition that it was a case of a certain general rule, and thereupon adopt that

supposition. Or, where we find that in certain respects two objects have a strong resemblance, and we infer that they resemble one another in other respects.

Considering the white beans from the point of view of identity, their resemblance involves much more than ‘guesswork’. The beans in the ‘result’ line share a predicate (being ‘white’) with the beans from the bag. It is a predicate which, because it involves a ‘perceptual judgment’, “contains general elements” (EP2: 229). In other words, the two sets of beans don’t just have two *singular* predicates attached to them – instead, they partake (like an icon) of the same *general* predicate. Whiteness is, therefore, contained in both identities and this is something which may potentially connect them.<sup>51</sup> As a result, Peirce argues that the mind is justified in asserting, *and on a logical basis*, that the white beans are potentially from the bag. This is because it has identified a resemblance between two identities based on the shared predicate. Therefore, Peirce describes abduction as “a method of forming a general predication” (EP2: 299). It involves working backwards from a shared predicate (that belongs to a class) to an identity from which the intellect is entitled to make a logical inference. Indeed, this may explain why Peirce initially calls this form of inference ‘retroduction’ – for it retraces implicit connections which may exist because the mind always perceives things as members of classes.<sup>52</sup>

In another example, Peirce discusses the nineteenth century concept of a ‘mugwump’. In this passage, from 1892, he has yet to adopt the terminology of abduction (Gambarato 2013: 425; Mcauliffe 2015: 302). He is still using the notion of “hypothetic inference” (EP1: 328):

---

<sup>51</sup> It is, perhaps, useful to reflect on the differences between Peirce’s suggestion that the mind can identify a possible iconic similarity, and the semiological claim to identify a paradigm. This latter claim was discussed, and rejected, in chapter two, because there is no criterion to establish whether a paradigm exists. Saussure and Barthes require prior knowledge of the associative axis to perform this task. Such knowledge is not required, however, when Peirce simply *hypothesises* a similarity between two experiences. The icon, as a result, needs no justification to become a possible form of knowledge. Peirce’s identification of potential similarities in the world creates icons that *positively* inform the world. In contrast, their insistence on their prior knowledge of the signifier means that Saussure and Barthes are trapped within a system requiring pre-existing knowledge to explain meaning. It is this claim that, inevitably, leads them to conclude that meaning is culturally formed.

<sup>52</sup> The reader will note that Peirce’s philosophical move here echoes icon formation. The latter is a hypothetical identity partaking of a general similarity (it is a member of a class which can be further determined). The icon is not, as a result, a similarity established between two *known* identities. Likewise, in abduction, Peirce claims that the predicate ‘white’ is *general*, rather than *singular*, because it is relationally defined. As a result, he claims the intellect is justified in hypothesising that a bean may possess other predicates because it belongs to the same class.



By hypothetical inference, I mean, as I have explained in other writings, an induction from qualities. For example, I know that the kind of man known and classed as a 'mugwump' has certain characteristics . . . [Peirce lists here the opinions of a 'mugwump' at length] . . . These views, among others, I know to be the obtrusive marks of a 'mugwump'. Now, suppose I casually meet a man in a railway-train, and falling into conversation find that he holds opinions of this sort; I am naturally led to suppose that he is a 'mugwump'. That is hypothetic inference. That is to say, a number of readily verifiable marks of a 'mugwump' being selected, I find this man has these, and infer that he has all of the other characters which go to make a thinker of that stripe.

Here is a similar pattern of inference, but Peirce now suggests that a *set* of observed predicates can lead to a hypothesised identity. This contrasts with the white beans where only one predicate was used to make an inference. Again, however, Peirce still works back to a conclusion from certain observed qualities – abductive inference enables him to replace a collection of predicates with one concept, or identity. This mental act simplifies his understanding of the world in a way that, again, echoes the formation of an icon. As Peirce argues (EP1: 198–199):

Hypothesis substitutes, for a complicated tangle of predicates attached to one subject, a single conception. Now, there is a peculiar sensation belonging to the act of thinking that each of these predicates inheres in the subject. In hypothetic inference this complicated feeling so produced is replaced by a single feeling of greater intensity, that belonging to the act of thinking the hypothetic conclusion.

Of course, this kind of inferential thinking is entirely anathema to the nominalist. In 'secondary dualism' an identity is created by the inspecting mind; it is something that is only conferred by the intellect. In nominalism, an identity would be incapable of forming a *logical* basis for abductive inference. Once, however, it is acknowledged that identities are created through 'perceptual judgments', by icons, or in 'thirds', then it becomes possible to entertain a *logical* basis for abductive inference. As Peirce explains, in '*Pragmatism as the Logic of Abduction*', abduction is rooted in the "conception of character" (EP2: 233).

Going back to the example of the white beans, the importance of *relations* in Peirce's formulation of abduction should also be highlighted. It has been observed that Peircean concepts are formed on a relational basis. It follows from this that subject/predicate relationships should *not* be treated as incidences (as assumed in the atomistic model of 'secondary dualism'). Instead, relationships with the world are integral features of perceptions, concepts, and the identities which they create. It follows that any observed relationship in the world can always be thought of, in Leibnizian terms, as a small fragment of a 'real definition'. As a result, the mind can use an observed relationship (e.g., all the beans from this bag are white) to infer other properties (e.g., these beans are from this bag). It is important to emphasise, however, that such claims to logical inference are

deeply rooted in Peirce's 'containment' theory of truth. The mind can infer backwards, in this abductive manner, only because there might be a connection between a subject and a predicate based on *identity* rather than mere *incidence*.

This interpretation concurs with the view of Turrise (1990: 465–497), who argues that abductive inference should be construed through the lens of Peirce's "doctrine of realism" (Turrise 1990: 465). Turrise, however, tends to focus on Peirce's three categories, and his 'perceptual judgments', as means of establishing the philosophical foundations of abduction. She is less inclined to relate abduction to the idea of identity or, indeed, to the action of signs (Turrise 1990: 495):

These basic [universal] categories, he claimed, enter into the constitution of every phenomenon or fact of perception. An abduction is an application of the logic of categoric relations in a systematic interrogation of the specific character of the categoric structure of a particular idea or matter of fact. Each step in an abductive inference is a perceptual judgment or an abstractive perception of a categoric relation, a generality.

But it is evident that Peirce's notion of abduction involves much more than a simple conjecturing of hypotheses. What Peirce has identified is an important philosophical consequence of human knowledge if it forms a semiotic web of interrelated identities. Created through semiosis, these identities allow the mind to work backwards, from observed predicates to hypothesised identities, or from one predicate to others. This is only possible because predicates are already embedded in these relationally formed identities. When the mind encounters a predicate included in an identity, it can hypothesise that it is dealing with a similar type of identity because such identities are real rather than interpreted. In this Peircean account, abduction becomes a logical form of inference founded on a non-nominalistic account of identity. This way of construing empirical knowledge derives, of course, from Peirce's sign theory which shows how synthetic concepts are created. It also resonates with his concept of truth and his doctrine of pragmatism. Abduction should, therefore, be viewed as a direct outcome of Peirce's semiotics.

## 14 Peircean semiotics and learning theory

It is now possible to summarise Peirce's semiotic understanding of cognition, human knowledge, and reality, and compare them with the conventional templates of 'primary' and 'secondary dualism'.

'Primary dualism' advocates a vision of reality comprising physical objects located in three-dimensional space. The mind of the perceiver (*res cogitans*) is separated from reality (*res extensa*) by a Cartesian divide. In response to this initial division, 'secondary dualism' is sometimes invoked by philosophers as a possible way to circumvent the problems of 'primary dualism', but this move, in fact, only makes matters worse. The intellect, within this new framework, only experiences reality via representational 'sense impressions' and this creates a threefold problem. Firstly, human sense data become, paradoxically, a barrier to knowledge of the 'noumenal' world which may (or may not) exist 'beyond' experience. Secondly, these sense impressions atomise experience in such a way that the mind no longer perceives the connections between them. And, thirdly, the notion of 'sense impressions' gives rise to the misleading belief that they offer direct knowledge of human experience ('The Myth of the Given').

In these circumstances, a set of very familiar philosophical problems arise: human knowledge is rendered interpretative, subjective, relative, or even ideological in nature. At the same time, this template has led to the emergence of social constructivist theories of knowledge, the rise of postmodernism, and the problems of the 'post-truth age'. Paradoxically, however, this same cognitive model has acquired such hegemony over the modern mind that it, simultaneously, also forms the basis of the physical sciences. This is because science believes that it solves the very problems presented by 'secondary dualism'. The scientific method claims to establish knowledge of the external world by conferring new status on the 'constant conjunctions' observed between atomised sense impressions. Using statistical methods, these are translated into the 'necessary connections' of cause and effect.

In this essay, our discussion has explored the alternative templates of cognition, knowledge, and reality espoused by Peirce and Hegel. Their accounts are based on the central proposition that the mind's cognitive world is formed, not of physical objects, but of identities (signs or Notions). These are defined by their relationships with each other, and their meanings are formed by what is included within their concepts, rather than by empirical correspondence. Moreover, because these identities are relationally defined, reality forms a synechistic 'web' where these identities reciprocally reflect with each other. In this model, human knowledge, like reality itself, becomes relational in character. Such knowledge is

not ‘constructed’ by the mind interpreting its sense impressions, but rather it is created by the dialectical/semiotic way in which concepts are formed. Such empirical knowledge, even though it remains partial in character, should not be viewed, however, as subjective. This would imply (in dualistic fashion) that it is relative to reality. In contrast, Hegel, and Peirce both insist that empirical knowledge grows as the mind creates mediating concepts which fuse together subjective and objective elements. Concepts thus evolve, in Vygotskian fashion, into semiotic ‘tools’ which the human mind uses to navigate the world. Their only limitation is that they necessarily remain open to revision and further determination.

Peirce thus asserts that the mind experiences reality *through* the mediation of the synthetic identities which he calls signs. These identities have not been arbitrarily plucked from the air – as they would be in the nominalistic model of ‘secondary dualism’. Rather, they are fashioned by the mind’s encounters with reality when icons are first posited and then qualified by secondness. This semiotic activity renders these identities (e.g., interpretants) pragmatically efficient. The underlying trajectory of sign activity – semiosis – is not, as a result, a matter of (subjective) interpretations of signs being built upon earlier (subjective) interpretations of other signs; rather the arc of semiosis involves a convergent determination of semiotic identities.

This activity also involves a constant interplay between content and form. In the model of ‘secondary dualism’ form can only be applied to content; it is, effectively, a one-way street. For Hegel and Peirce, however, form and content work in both directions because content (via Hegelian dialecticism, or Peircean secondness) can reflexively qualify form. The outcome of such activity is a system of concepts which have not been created through interpretation. Instead, they possess a logical character – a consequence of the fact that they contain only the indexical links that reality has allowed them to contain. Peirce thus envisages a Leibnizian version of truth which combines both analytic and synthetic elements. And within this semiotic view of human knowledge is entailed Peirce’s rejection of Cartesian dualism, his synechism, and the system of ‘natural propositions’ present in his third trichotomy. And, as discussed above, it also forms the foundations of his pragmatism and his advocacy of abduction as a form of logical inference.

The system adopted by Hegel and Peirce, of course, differs from that of Spinoza and Leibniz because the two earlier philosophers structured their accounts of reality on a framework that involved God. Identities, in the form of Leibnizian monads, or Spinoza’s determinations of a single divine substance, were construed, as a result, as pre-existing human experience. It followed that they were empirically *discoverable* by the human mind. In the systems of Hegel and Peirce, however, identities are *created* at the interface where the mind interacts

with empirical experience. In this process, Hegel's Essences evolve, through his dialecticism, into Notions and the 'Absolute Idea'. For Peirce, in contrast, 'objects of thought', embedded within the triadic sign, ascend to the level of sublated symbols and systems of symbols. But both approaches share a common rejection of Cartesian dualism.

The empirical knowledge formed in both Hegel's and Peirce's systems is synthetic in nature. It is not entirely created by the mind but is formed through the constant interaction of the mind and reality; it is, as a result, mediatory in nature. Vygotsky shares this Hegelian view – he only differs in selecting an alternative source of 'form'. He believes that it derives from the speech of others rather than through a Hegelian/Peircean positing of an initial identity. As discussed, the Peircean, and Vygotskian forms of synthetic mediation which emerge in this process differ radically from conventional interpretations of mediation often found in the secondary literature. These frequently construe 'mediation' as the sign mediating between the object and the mind or communicating between individuals. In such construals, the sign is reduced to little more than a special kind of sense impression or, indeed, a social construct. In both cases this way of understanding Peirce and Vygotsky adheres to the underlying framework of 'secondary dualism'. In contrast, Peirce views the object in the sign as a mediating locus, where the synthesis of the empirical and the intellectual takes place. Vygotsky, echoing Peirce, views 'word meaning' as a synthetic 'amalgam'. It follows from both theoretical positions that human beings live in a world that is both *formed* semiotically and which can be *understood* semiotically.

## 14.1 The learning process: 'semiotic scaffolding'?

In this analysis, Peircean semiotics is reframed as a mechanism for understanding the *empirical* world. This revision also opens the possibility of extending the remit of biosemiotics to include any entity (including physical objects) which begin their 'natural history' as 'objects of thought'. The very atoms and molecules of reality can be construed, therefore, as being semiotically formed. As such, Peircean semiotics can also contribute substantially to educational learning theory. The fact that this has not always been the case is testament to the lingering belief amongst some semioticians that Peircean signs, construed as interpretations, are phenomena which intrinsically distort human understanding of reality.

There are indications, however, that this perspective is changing, and that Peircean semiotics is becoming an increasingly important aspect of learning theory. The growing influence of Edusemiotics is evidence that semiotics is expanding beyond its origins in linguistic and cultural studies. Pioneers in this area

include Stables (2008) and Olteanu (2015) who have both adopted a Peircean approach to educational learning theory. Stables argues that semioticians should abandon Cartesian dualism and should apply the implications of Peircean thought to educational frameworks. Learning is not a matter of the teacher transmitting information to the student across a Cartesian divide (Stables 2010: 21). Instead, educationalists should think of the learning process as “semiotic engagement” – with the learner as an active participant in the process (Stables 2008: 89). Meanwhile, Olteanu maintains that insufficient attention has been paid the role of signs in learning theory and that the philosophy of education must rediscover its “semiotic foundation” (Olteanu 2015: 22). Olteanu, in particular, discusses the icon and its potential role in “diagrammatic reasoning” (Olteanu 2015: 193–204) as a way of understanding child learning. Elsewhere, Nöth suggests that, in a relational world which has no boundaries, educationalists should move away from a strict compartmentalisation of academic subjects (Nöth 2010: 4). As a result, edusemiotics also challenges the conventional divisions between the sciences and the arts.

Despite all these developments, however, there remain considerable barriers to the integration of Peircean semiotics and educational understanding of the learning process. Stables has suggested, for example, that there may be difficulties “in taking Peirce as the basis of a fully semiotic theory of education” (Stables 2014: 598). The underlying challenge has always been to show how Peircean semiotics details an account of the learning process itself. In other words, it has not been clear how his vision of semiotics explains concept formation. It is, of course, this aspect of learning theory that has established Vygotsky’s status within the philosophy of education; he offers a model of how a child’s concepts are formed. It has been argued that Vygotsky’s commentators over emphasise the social aspects of this process and have tended, as a result, to marginalise the Hegelian influences in his thought. But Vygotsky remains a central figure in educational theory and his status suggests that it may be possible for Peirce to claim similar credentials – based upon the same Hegelian template.

One of the aims of this essay, therefore, has been to demonstrate the potential for Peircean semiotics in relation to educational learning theory. Indeed, this is one of the reasons why Vygotsky and Peirce have been brought together in this discussion. It has highlighted their theoretical convergences and has sought to demonstrate how Vygotsky’s Hegelian heritage is shared with Peirce. The benefits of this are potentially far reaching for educationalists. The possibility exists to develop a new form of ‘cognitive semiotics’ which explains how children create their own concepts and construe their world through signs. Such an analysis draws Peirce closer into the mainstream of educational learning theory. In this

final chapter, however, it is possible to identify ways in which Peirce’s own semiotic perspective can enhance, and extend, that of Vygotsky’s.

One of the problems with Vygotsky’s account of concept formation is that it is relatively easy to view it as a psychological and social theory rather than a semiotic one. As discussed, commentators on Vygotsky underplay the Hegelian elements in his theory and focus on the more social aspects of his thought. This opens a significant gap in Vygotskian exegesis – one which Peirce’s account of concept formation can fill in ways accessible to the modern educationalist. This is the case for several reasons. Firstly, the dynamic of Peirce’s sign theory avoids Hegel’s dialecticism and replaces it with the notion of secondness. This may act as some relief to those who feel uncomfortable with the intellectual baggage that dialecticism may entail. Secondly, the fact that reality plays this role in concept formation gives Peirce’s own sign theory a strong empirical flavour which renders it more accessible to modern readers. Thirdly, it can be argued that Peirce’s account, once properly understood, is applicable to learning theory simply because it provides a clear, and practical, framework for concept formation. Peirce, as has been discussed, breaks down the “natural history of the sign” into more stages than Vygotsky. These are pre-semiotic ‘perceptual judgments’, the initial formation of icons, the addition of indices, and the final sublation of the emerging identity into a symbol. This Peircean template provides a potential framework through which educationalists can understand a child’s concept development.

Through the work of Bruner, Vygotsky is often associated with the idea of ‘scaffolding’. But, as highlighted, this concept is often misinterpreted as involving social aspects operating within the ZPD. Indeed, as Campbell, Olteanu and Kull point out, the notion of ‘scaffolding’ is curiously absent from much of semiotic discourse (Campbell, Olteanu, Kull 2019: 355). These authors highlight, for example, that the term has no entry in five semiotic dictionaries between 1993 and 2010. As a concept, it seems to have been entirely co-opted by social constructivists and has been distanced, as a result, from mainstream semiotics. But it can be argued, and persuasively so, that the real proponent of a *framework of different stages* in concept formation is Peirce himself. He outlines, in more detail than Vygotsky, how concepts develop through the combinatory interactions of the three elements of the sign and his three categories. Peirce does not talk, of course, in terms of ‘scaffolding’, but the stages in the development of an emerging ‘object of thought’ mirror that notion very closely. Peirce’s sign theory, therefore, offers educational theorists the possibility of tracing the ‘natural history’ of a particular sign and doing so, moreover, in the context of an individual child.

Applying Peirce’s approach to concept formation, it is possible to discern the contours of a semiotic template for the learning process. On occasions, for example, Peirce talks about the structure of human concepts in terms of their ‘breadth’

and 'depth'. These two dimensions, within signs, demarcate the limits of their synthetic meaning. The 'breadth' of a sign is limited by the actions of secondness, and its 'depth' is determined by the predicates that it includes – based on a child's experience of the world. Peirce states, for example (EP2: 305):

The totality of the predicates of a sign, and also the totality of the characters it signifies, are indifferently each called its logical *depth*. This is the oldest and most convenient term. Synonyms are the *comprehension* of the Port-Royalists, the *content* (*Inhalt*) of the Germans, the *force* of De Morgan, the *connotation* of J.S. Mill. (The last is objectionable). The totality of the subjects, and also, indifferently, the totality of the real objects of a sign, is called the logical *breadth*. This is the oldest and most convenient term. Synonyms are the *extension* of the Port-Royalists (ill-called *extent* by some modern French logicians), the *sphere* (*Umfang*) of translators from the German, the *scope* of De Morgan, the *denotation* of J.S. Mill.

Peirce concludes that it is this combination of the 'breadth' and the 'depth' of signs which provides the human mind with synthetic 'information' (EP2: 305).

In the above citation, however, it should also be noted that Peirce insists that he is concerned with a sign's *logical* 'breadth' and 'depth'. As explained earlier, the content of a sign is logical because it has been fashioned through the effects of experience. The meaning of a sign includes only what has been permitted by previous experience. Such an analysis reflects Leibniz's exposition of 'clear' and 'distinct' ideas whereby the former *distinguishes* one idea from another (on a horizontal dimension), whilst the latter details the *contents* of the sign (on a vertical dimension). If this thinking is applied to the learning experience of a child, it is possible to outline a model to explain their grasp of particular concepts. This can be achieved, at a practical level, by asking a child where the 'edges' of a particular concept exist. For example, when does a 'chair' become a 'sofa', or when does a 'killing' become 'murder'? Such enquiries may be dismissed by secondary dualists as debates about 'nominal' definitions. In the Peircean model, however, these questions allow the exploration of the inclusions in a child's concepts and the way in which they are structured.

These enquiries may also help us understand the respective roles of 'form' and 'content' in a child's concepts. For Peirce offers a semiotic template which allows the educationalist to identify how a concept is structured.<sup>53</sup> For example, when a child uses a concept, it is possible to ask the following type of questions:

---

<sup>53</sup> A theoretical template that can be adopted to understand the inclusions in a particular concept is eloquently explained by Leibniz in a monograph called '*On Wisdom*' (Leibniz 1693 [1951]: 78–79):

The *art of discovery* consists of the following maxims:



- What kinds of 'perceptual judgment' are being made? How does a child classify a specific element of the world?
- Which elements of an experience does a child 'pick out' when they form an icon? In other words, how are distinctions, based on similarity, being made?
- Once these putative identities are formed, how are they subsequently 'filled out' with indexical components? In other words, how are a child's icons subsequently determined?
- Does any sublation take place as an emerging concept develops? Does the child invert the relationship between the indices and the emerging identity in a way that means that the former now act as signs of the latter?

But the usefulness of Peirce's semiotic structure is not limited to these kinds of examinations. It is also possible to identify a clear *order effect* in concept formation which has important effects at an applied level. The Peircean icon is created in such a way that subsequent indices serve to *qualify* it. This means that there will always be an implicit *hierarchy* in a child's concepts. For example, in a bedtime story, a child may form the concept of 'wolf'. This will involve an initial icon (of an evil animal?) and a series of subsequent qualifications (derived from the details of the story). It matters greatly on what basis the initial icon (of a wolf) is picked out and how that identity is then qualified. If, in the story, the child has negative experiences of wolves, then these qualifications may inform

- 
- 1) In order to become acquainted with a thing we must consider all of its prerequisites, that is, everything which suffices to distinguish it from any other thing. This is what is called definition, nature, essential property.
  - 2) After we have found a means of distinguishing it from every other thing, we must apply this same rule to the consideration of each condition or prerequisite entering into this means, and consider all the prerequisites of each prerequisite. And that is what I call *true analysis*, or the distribution of the difficulty into several parts.
  - 3) When we have pushed the analysis to an end, that is, when we have considered the prerequisites entering into the consideration of the proposed thing, and even the prerequisites of the prerequisites, and finally have come to considering a few natures understood only by themselves without prerequisites and needing nothing outside themselves to be conceived, then we have arrived at a *perfect knowledge* of the proposed thing.

Although, as a methodological approach, this may seem quite daunting, Leibniz does not expect the human mind to achieve such 'perfect knowledge'. When analysing a child's concepts, it may be that only a few levels of analysis are required to understand its main contents. Leibniz, of course, positions this approach as an '*art of discovery*' because he assumes that his subject matter is *reality* itself. In the hands of Hegel and Peirce, however, it remains largely an analysis of concepts because the subject matter is formed (at least partially) by the human mind.

the child thinking about wolves for years to come. But if the initial icon formed is positive (admittedly, an unlikely event in children's story books!), then the icon, and its subsequent developmental pathway, may be very different. The critical point here, of course, is that if the child forms an initial negative identity, then it will take *many* subsequent qualifications to reframe it. This compares to a scenario where the concept of 'wolf' begins its 'natural history' as a positive identity.

This order effect in sign formation can be observed in the meanings that signs create. It matters, for example, whether the mind construes an individual as a 'parent who steals', or as a 'thief who has children'. The initial identity determines the subsequent qualifications of it. The nominalist, of course, views this as merely a subjective way of speaking about the same person (because identities are always nominal). However, it is clearly useful to think of human concepts as possessing these intrinsic hierarchies. Concepts are not simple collections of ideas or associations in the mind (e.g., the associative view criticised by Vygotsky); rather they involve specific order-effects determined by the respective actions of iconicity and indexicality. In an educational setting, therefore, it might be beneficial to explore how an individual (who has, perhaps, prejudicial views about race, for example), has formed their concept of a person from an ethnic minority. What kind of icon have they initially formed, on what basis, and what are the specific qualifications that they have attached to this identity? This might be a first step in helping such an individual form a more enlightened concept.

Importantly, this kind of semiotic analysis can be conducted by talking with children. Educationalists can employ Peirce's template to identify how a child has formed (or, indeed, has failed to form) a particular concept and why it has a certain structure. It is thus possible to reframe the notion of 'scaffolding' in an applied way – based on Peircean sign formation.

## 14.2 Peirce's logic and semiotic freedom

Peirce's semiotic template thus has the potential to both enhance our understanding of the empirical world and the educational learning process. Peirce provides a clear account of concept formation, and he does so in a way that gives a significant role to empirical input at the individual level. These two aspects are more difficult to discern in Vygotsky's work because of his greater emphasis on dialectics and the role of 'outer speech' in meaning making.

There is one element of Peirce's theory, however, that is likely to encounter resistance in contemporary educational circles. This is the emphasis that he gives to the idea of *logic* in concept formation – a perspective that he inherits from Hegel. Referring to the passage earlier in this chapter, Peirce talks of the

“*logical breadth*”, and the “*logical depth*” of the sign. For Peirce, knowledge is a matter of logic because it is through a logical process that human concepts are formed. He states, as a result, echoing Hegel, that “everything that is true is logical, whether we know it or not” (EP2: 255). Moreover, on one occasion, Peirce even asserts that “a liberal education – as far as its relation to the understanding goes – means *logic*” (EP1: 212).

The reason that Peirce claims that signs have “logical breadth”, and “logical depth”, is that their meanings are determined by reality itself. This position, as discussed earlier, underpins his pragmatism and supports Stjernfelt’s claims concerning ‘natural propositions’. A child cannot decide, arbitrarily, upon the contents of their own concepts; it is a matter of logic what empirical concepts contain.

This conclusion, however, flies in the face of contemporary educational thinking which insists that freedom, in a liberal education, springs from the very fact that a child can interpret the world in their own terms. This principle is often combined with the argument (which Peirce would have endorsed) that the child learns most effectively through exploration and trial and error – rather than through rote learning. Peirce’s suggestion that logic is involved in the learning process, however, seems to undercut the claim that education should be experiential. However, such arguments are, thankfully, misplaced. They only appear to be valid if educationalists mistakenly conflate Peirce’s invocation of logic with a form of analytical thinking which excludes empirical inputs.

In conventional models of meaning-making the assumption that individual *interpretation* creates meaning supports the liberal claim that a child must possess individual freedom when forming their concepts. This is a view which is deeply embedded in the modern semiotic tradition. Wheeler (2006: 124) argues, for example, that:

The evolution of self-consciousness, language and culture is the emergent form in which human animals signify and remember; and through this they enter into a new stratum in which, for the first time on this planet, we can entertain the hope of bringing our intelligence to bear upon the future in more than the immediate ways characteristic of other animals. In the latter, later evolutionary forms exhibit more semiotic freedom than earlier forms. Human semiotic freedom, our capacity to bring our intelligence and other capabilities to bear on the future, is thus very closely tied to the human experience of hope.

Likewise, Hoffmeyer suggests that semioticians should “ . . . regard signs as a phenomenon that has, in the course of evolution, freed itself more and more from what it signified, or – in the parlance of this book – acquired greater and greater semiotic freedom” (Hoffmeyer 1996: 78). In conventional terms, therefore, the mind’s ability to interpret signs has become closely aligned in the literature with the idea of human freedom. Within educational theory, this perspective is

often raised to a higher level where it becomes systematised as a form of social constructivism. It is maintained, as a result, that subjective meanings are individually and collectively created. Such positions have become, as Phillips (1995: 5) observes “something akin to a secular religion” in education theory. Stables confirms this view, observing that “social constructionism [. . .] is arguably the dominant educational philosophy at the time of writing, at least in the European and English-speaking worlds” (Stables 2008: 106). It seems, as a result, that Peirce’s appeal to logic may run contrary to the modern educational demand for interpretative freedom in the learning process and the associated desire to encourage child creativity.

Peirce’s position, however, is not inimical to the idea of semiotic freedom. His appeal to logic only suggests a potential problem if it is assumed that logic and freedom are binary opposites. Such a perspective, of course, stems from the view that logic must involve analytic truth, and this will impinge on human freedom through deterministic necessity. But it has already been indicated that Peirce’s vision of truth circumvents this problem. In advocating a form of truth that transcends Kant’s conventional analytic/synthetic division, Peirce supports a position which allows concepts to be simultaneously analytic in structure and empirically contingent.

Moreover, when considering Peirce and Vygotsky’s account of concept formation, much potential exists for individual freedom. In the case of Vygotsky, it has been suggested that although the social dimension brings ‘form’ to ‘word meaning’, the activity of meaning creation is still heavily reliant on input from the child’s *individual* ‘natural perceptions’. This means that even though a particular ‘word’ might find its origins in the discourse of others, the exact contents of the concept may well differ for each individual. Different personal experiences will ensure that individualised meanings will be formed; there is thus a high degree of autonomy in a child’s concept formation. In a Peircean context, individual freedom is also present, but it is located elsewhere within his system. Freedom enters concept formation when an individual initiates a ‘form’ (via an icon) and an initial ‘object of thought’ is created on an individual basis. Moreover, Peirce insists that iconicity involves the imagination – ensuring that creativity is present at the very beginning of sign formation. It is clear, therefore, that neither Vygotsky, nor Peirce, rest their appeals to semiotic freedom on the nominalist idea that individuals are at liberty to ‘carve up’, or interpret, reality as they see fit.

Additionally, both Peirce and Vygotsky insist that the *outcome* of sign formation encourages human freedom. Through signs, they argue that the human mind is able to establish a semiotic understanding of the world which would be unattainable if it were dictated by ‘natural perceptions’. In line with the arguments of Wheeler and Hoffmeyer, the form of semiotic reality that humans create is more

complex than any formed from sensory inputs alone. But for Peirce, the pathway to semiotic freedom is not via interpretation; instead, it is achieved because the human mind creates new identities in the world (e.g., 'thirds'). These new identities exist in the world as interpretants, and they create semiotic 'tools' to understand reality. Likewise, Vygotsky invokes the 'higher psychological processes' which free the intellect from being a slave to its senses (Vygotsky 1987: 127).

Earlier in our discussion, it was also noted that McDowell (1994: 77) maintains that empirical experiences *include* the conceptual. He supports this view with the suggestion that humans possess a 'second nature' that allows the mind to create concepts which include more than is directly perceived. Given our earlier discussion, it is notable that McDowell traces the notion of 'second nature' back to Hegel and he relates it to the German concept of '*Bildung*' (McDowell 1994: 84). Bakhurst, following McDowell, also explains this specific concept in terms which reflect the mind's ability to "move within a space of reasons" (Bakhurst 2011: 149):

As we mature, we acquire a 'second nature' through enculturation, or *Bildung*. Our second nature includes conceptual capacities that enable us to move within the space of reasons, so that we think and act in light of a conception of the world, rather than simply respond, as non-human animals must, to biological imperatives.

And Bakhurst directly links the idea of '*Bildung*' to educational learning theory and the processes involved in forming one's own identity (Bakhurst 2011: 7):

In the present context, the crucial aspect of McDowell's position is that human beings are not born into the space of reasons but are initiated into it by education, or *Bildung*, as he puts it, adopting the evocative German term. The child is born a mere animal, as it were, but acquires a 'second nature' as she develops conceptual capacities that put her in touch with reality in experience. She thereby becomes a conscious rational being – a person.

The German notion of '*Bildung*', therefore, reinforces the claim that concept formation, as framed by Peirce, has the capacity to establish human freedom. By developing concepts that allow individuals to understand the world semiotically, human beings can begin to act autonomously.

In the context of their Hegelian influence, Peirce and Vygotsky would almost certainly subscribe to McDowell's notion of '*Bildung*'. Both may quibble with Bakhurst's modern emphasis on 'enculturation', but they would agree that '*Bildung*' allows the individual to create a conceptual world more complex than one founded on stimulus and response.<sup>54</sup> Peirce would also reject the idea that

---

<sup>54</sup> Richard Rorty also highlights the notion of *Bildung* in his "*Philosophy and the Mirror of Nature*". But he reframes the concept as 'edification' (Rorty 1980: 360). As such, Rorty links it

such semiotic freedom is founded on the ability to interpret sense data residing on the 'glassy essence' of the mind. Rather, he would maintain that such freedom is established through the mind's ability to create its own individual 'objects of thought'. Once formed by iconicity, signs pursue a 'natural history' and, through their continuous development, the human intellect understands its semiotically formed world.

---

with the idea of conversation, and discourse, and argues that "to see keeping a conversation going as a sufficient aim of philosophy, to see wisdom as consisting in the ability to sustain a conversation, is to see human beings as generators of new descriptions rather than beings one hopes to be able to describe accurately" (Rorty 1980: 378). This is in line with Rorty's own account of pragmatism (in section 13.1), but it is quite different from that of Peirce.

# References

## The Writings of Charles Sanders Peirce

The majority of references from Peirce's writings come from *The Essential Peirce: Selected Philosophical Writings*. Volumes 1–2, with various editors at the Peirce Edition Project. Indiana UP (1992/8). These are referenced as 'EP' with volume number and page number. Other references come from the *Collected Papers of Charles Sanders Peirce*. Vols 1–6, Hartshorne and Weiss, eds, Vols 7–8, Burks ed. Harvard UP, 1931–5 and 1958. These are referenced as 'CP' with volume and section number. I have occasionally referenced the *Writings of Charles S. Peirce: A Chronological Edition*. Vols 1–6, various editors at the Peirce Edition Project, Indiana, 1982–2000. These are referenced with a 'W', volume number, and page number. And also, *Semiotics and Signifys: The Correspondence between Charles S Peirce and Victoria Lady Welby*. Ed Charles S. Hardwick (1977) Bloomington: Indiana University Press. These are referenced as 'SS' with the page number. There are some references to unpublished manuscripts of Peirce in the Houghton Library. These are denoted by 'MS' and a manuscript number along with the secondary source of the reference.

## The Writings of Lev Vygotsky

Vygotsky, Lev .1978. *Mind in Society: The Development of Higher Psychological Processes*. Cambridge (MA): Harvard University Press.

Vygotsky, Lev. 1987. *The Collected Works of L.S. Vygotsky. Vol 1: Problems of General Psychology*, R.W. Rieber and A.S. Carton (eds.) New York: Plenum Press.

Vygotsky, Lev. 1993. *The Collected Works of L.S. Vygotsky. Vol 2: The Fundamentals of Defectology*, R.W. Rieber and A.S. Carton (eds.) New York: Plenum Press.

Vygotsky, Lev. 1994. *The Vygotsky Reader*, R. Van der Veer and J. Valsiner (eds.) Oxford: Blackwell Publishers.

Vygotsky, Lev. 1997a. *The Collected Works of L.S. Vygotsky. Vol 3: The Problems of the Theory and History of Psychology*, R.W. Rieber and J. Wollock (eds.) New York: Plenum Press.

Vygotsky, Lev. 1997b. *The Collected Works of L.S. Vygotsky. Vol 4: The History of the Development of Higher Mental Functions*, R.W. Rieber (ed.) New York: Plenum Press.

Vygotsky, Lev. 1998. *The Collected Works of L.S. Vygotsky. Vol 5: Child Psychology*, R.W. Rieber (ed.) New York: Plenum Press.

Vygotsky, Lev. 2012. *Thought and Language*. Cambridge (MA): MIT Press

Vygotsky, Lev and Alexander Luria. 1994. *Tool and Symbol in Child Development*. In *The Vygotsky Reader*, R. Van der Veer and J. Valsiner (eds.) 99–174. Oxford: Blackwell Publishers.

## The Writings of Georg Wilhelm Hegel

The 1892 William Wallace translation of '*The Science of Logic*' and the 1894 William Wallace translation of '*Philosophy of Mind*' have been quoted as they are contemporaneous with Peirce.

Hegel, Georg Wilhelm. 1830/1894. *Philosophy of Mind*. Trans: William Wallace. Oxford: Clarendon Press.

Hegel, Georg Wilhelm. 1830/1991. *The Encyclopaedia Logic (Part One)*. Trans: T. Geraets, W. Suchting and H. Harris. Indianapolis: Hackett Publishing Company.

Hegel, Georg Wilhelm. 1892/2014. *The Science of Logic*. Trans: William Wallace. Oxford: Oxford University Press.

Hegel, Georg Wilhelm. 1777. *Phenomenology of Spirit*. Trans: A.V. Miller. Oxford: Oxford University Press.

## Other Sources

Acton, Harry. 1936. The Theory of Concrete Universals (1). *Mind* 45: 417–431.

Acton, Harry. 1937. The Theory of Concrete Universals (2). *Mind* 46: 1–13.

Aertsen, Jan. 2012. *Medieval Philosophy as Transcendental Thought: From Philip the Chancellor to Francisco Suárez*. Leiden: Brill.

Almeder, Robert. 1980. *The Philosophy of Charles S. Peirce*. Oxford: Blackwell.

Almeder, Robert. 1985. Peirce's Thirteen Theories of Truth. *Transactions of the Charles S. Peirce Society* 21(1): 77–94.

Andacht, Fernando. 2013. The Lure of the Powerful, Freewheeling Icon: On Ransdell's Analysis of Iconicity. *Transactions of the Charles S. Peirce Society* 49 (4): 509–532.

Andacht, Fernando. 2014. Semiotic Gold at the End of Peirce's Rainbow: on the Fallible Pursuit of Reality. In Torkild Thellefsen and Bent Sørensen (eds.) *Charles Sanders Peirce in His Own Words*, 13–19. Berlin: De Gruyter Mouton.

Apel, Karl-Otto. 1981. *Charles Sanders Peirce: From Pragmatism to Pragmaticism*. Amherst: University of Massachusetts Press.

Aristotle. 1998. *The Metaphysics*. London: Penguin Books.

Ayer, Alfred. 1936/2001. *Language Truth and Logic*. London: Penguin Books.

Bakhurst, David. 2007. Vygotsky's Demons. In Harry Daniels, Michael Cole and James Wertsch (eds.) *The Cambridge Companion to Vygotsky*, 50–76. Cambridge: Cambridge University Press.

Bakhurst, David. 2011. *The Formation of Reason*. Chichester: Wiley-Blackwell.

Barbieri, Marcello. 2008. The Code Model of Semiosis: The first steps toward a scientific biosemiotics. *The American Journal of Semiotics* 24 (1): 23–37.

Barbieri, Marcello. 2009. A Short History of Biosemiotics. *Biosemiotics* 2: 221–245.

Barbieri, Marcello. 2015. *Code Biology: A New Science of Life*. Cham: Springer International Publishing.

Barbieri, Marcello. 2016. What is Information? *Philosophical Transactions: Mathematical, Physical and Engineering Sciences* 374: 1–10.

Barnham, Chris. 2020. Hegel and the Peircean Object. *Sign Systems Studies* 48 (1): 101–124.



- Barthes, Roland. 1990. *The Fashion System*. Berkeley: University of California Press.
- Barthes, Roland. 2009. *Mythologies*. London: Vintage Books.
- Baudrillard, Jean. 1988. *Selected Writings*, Mark Poster (ed.) Cambridge: Polity Press.
- Bellucci, Francesco. 2013. Peirce, Leibniz, and the Threshold of Pragmatism. *Semiotica* 195: 331–355.
- Bellucci, Francesco. 2017. *Peirce's Speculative Grammar: Logic as Semiotics*. London: Routledge.
- Bennett, Jonathan. 1971. *Locke, Berkeley, Hume*. Oxford: Clarendon Press
- Berger, Peter and Thomas Luckmann. 1967. *The Social Construction of Reality*. London: Penguin Books.
- Bergman, Mats. 2015. The *Highest Branch of Logic?* On a Neglected Question of Speculative Rhetoric. *Sign Systems Studies* 43(4): 463–482.
- Bernstein, Richard. 2013. Hegel and Pragmatism. In Alan Malachowski (ed.) *The Cambridge Companion to Pragmatism* 105–123. Cambridge: Cambridge University Press.
- Bidell, Thomas. 1992. Beyond Interactionism in Contextualist Models of Development. *Human Development* 35: 306–315.
- Blunden, Andy. 2011. Vygotsky's Idea of Gestalt and its Origins. *Theory and Psychology* 21 (4): 457–471.
- Blunden, Andy. 2017. The Germ Cell of Vygotsky's Science. In Carl Ratner and Daniele Silva (eds.) *Vygotsky and Marx: Toward a Marxist Psychology*, 132–145. London: Routledge.
- Boler, John. 1963. *Charles Peirce and Scholastic Realism: A Study of Peirce's Relation to John Duns Scotus*. Seattle: University of Washington Press.
- Brandom, Robert. 2000. *Articulating Reasons: An Introduction to Inferentialism*. Cambridge: Harvard University Press.
- Brier, Søren. 2008. *Cybersemiotics: Why information is not enough!* Toronto: University of Toronto Press.
- Bruner, Jerome. 1985. Vygotsky: A Historical and Conceptual Perspective. In James Wertsch (ed.) *Culture, Communication and Cognition: Vygotskian Perspectives*, 21–34. Cambridge: Cambridge University Press.
- Bruner, Jerome. 2001. In Response. In David Bakhurst and Stuart Shanker (eds.) *Jerome Bruner: Language, Culture, Self*, 199–215. London: Sage Publications.
- Burks, Arthur. 1946. Peirce's Theory of Abduction. *Philosophy of Science* 13 (4) 301–306.
- Burns, Tony. 2000. The Purloined Hegel: Semiology in the Thought of Saussure and Derrida. *History of the Human Sciences* 13 (4): 1–24.
- Campbell, Cary, Alin Olteanu and Kalevi Kull. 2019. Learning and Knowing as Semiosis: Extending the Conceptual Apparatus of Semiotics. *Sign Systems Studies* 47 (3): 352–381.
- Carlson, David. 2007. *A Commentary to Hegel's Science of Logic*. Basingstoke: Palgrave Macmillan.
- Caygill, Howard. 1995. *A Kant Dictionary*. Oxford: Blackwell Publishing.
- Chandler, Daniel. 2002. *Semiotics: The Basics*. London: Routledge.
- Chiasson, Phyllis. 2002. Peirce and Educational Philosophy. Retrieved from [www.digital-peirce.org/text](http://www.digital-peirce.org/text).
- Coble, Paul. 2009. Introduction in John Deely: *Realism for the 21<sup>st</sup> Century*, 3–18. Scranton: Scranton University Press.
- Coble, Paul. 2010. Introduction to *The Routledge Companion to Semiotics*, 3–12. London: Routledge.
- Coble, Paul. 2016. *Cultural Implications of Biosemiotics*. Dordrecht: Springer.

- Cobley, Paul. 2019. Peirce in Contemporary Semiotics. In Tony Jappy (ed.) *The Bloomsbury Companion to Contemporary Peircean Semiotics*, 31–72. London: Bloomsbury Academic.
- Cole, Michael. 1996. *Cultural Psychology: A Once and Future Discipline*. Cambridge, MA: Harvard University Press.
- Cole, Michael. 2005. Putting Culture in the Middle. In Harry Daniels (ed.) *An Introduction to Vygotsky* 195–222. London: Routledge.
- Cooke, Elizabeth. 2014. Peirce and the “Flood of False Notions”. In Torkild Thellefsen and Bent Sørensen (eds.) *Charles Sanders Peirce in His Own Words*, 325–329, Berlin: De Gruyter Mouton.
- Corrington, Robert. 1993. *An Introduction to C.S. Peirce*. Maryland: Rowman & Littlefield Publishers.
- Daniels, Harry. 2016. *Vygotsky and Pedagogy*. Abingdon: Routledge.
- Davis, William. 1972. *Peirce’s Epistemology*. The Hague: Martinus Nijhoff.
- Dea, Shannon. 2014. The River of Pragmatism. In Torkild Thellefsen and Bent Sørensen (eds.) *Charles Sanders Peirce in His Own Words*, 475–482, Berlin: De Gruyter Mouton.
- Deacon, Terrence. 2014. Semiosis: From Taxonomy to Process. In Torkild Thellefsen and Bent Sørensen (eds.) *Charles Sanders Peirce in His Own Words*, 95–104, Berlin: De Gruyter Mouton.
- De Waal, Cornelis. 2013. *Peirce: A Guide for the Perplexed*. London: Bloomsbury.
- Deely, John. 2001. *Umwelt. Semiotica* 134 (1): 125–135.
- Deely, John. 2002. *What Distinguishes Human Understanding?* Indiana: St Augustine’s Press.
- Deely, John. 2009. *Purely Objective Reality*. Berlin: Mouton de Gruyter.
- Deely, John. 2009a Realism for the 21<sup>st</sup> Century. In Paul Cobley (ed.) *A John Deely Reader, The Relation of Logic to Semiotics*, Scranton: Scranton University Press. 140–210.
- Deely, John. 2010. *Medieval Philosophy Redefined*. Scranton. University of Scranton Press.
- Deely, John. 2013. *Tractatus de Signis: The Semiotic of John Poinsett*. Indiana: St Augustine’s Press.
- Delaney, Cornelius. 1993. *Science, Knowledge and Mind: A Study in the Philosophy of C.S. Peirce*. Notre Dame: University of Notre Dame Press.
- Deledalle, Gérard. 1992. Peirce’s ‘Sign’: Its Concept and its Use. *Transactions of the Charles S. Peirce Society* 28 (2): 289–301.
- Deledalle, Gérard. 2000. *Charles S. Peirce’s Philosophy of Signs*. Bloomington: Indiana University Press.
- Deleuze, Gilles. 2006. *The Fold: Leibniz and the Baroque*. London: Continuum.
- Derrida, Jacques. 1982. The Pit and the Pyramid: Introduction to Hegel’s Semiology. *Margins of Philosophy*. London: Harvester Wheatsheaf.
- Derry, Jan. 2013. *Vygotsky: Philosophy and Education*. Chichester: Wiley Blackwell.
- Descartes, René. 1641/1985. *The Philosophical Writings of Descartes*, Vol.1. (Cottingham Edition). Cambridge: Cambridge University Press.
- Dewey, John. 1888. *Leibniz’s New Essays Concerning Human Understanding: A Critical Exposition*. Chicago: S.C. Griggs and Company.
- Eco, Umberto. 1976. *A Theory of Semiotics*. Bloomington: Indiana University Press.
- Eco, Umberto. 1999. *Kant and the Platypus*. London: Secker and Warburg.
- Eco, Umberto. 2018. Giorgio Prodi and the Lower Threshold of Semiotics. *Sign Systems Studies* 46 (2): 343–351.

- Edwards, Anne. 2007. An Interesting Resemblance: Vygotsky, Mead, and American Pragmatism. In Harry Daniels, Michael Cole and James Wertsch (eds.) *The Cambridge Companion to Vygotsky*, Cambridge, 77–100. Cambridge University Press.
- Emundts, Dina. 2015. Hegel as a Pragmatist. *British Journal for the History of Philosophy* 24 (4): 611–631.
- Fabbrichesi, Rossella. 2011. Iconic thought and diagrammatical scripture: Peirce and the Leibnizian tradition. *Semiotica* 186: 111–127.
- Feibleman, James. 1969. *An Introduction to the Philosophy of Charles S. Peirce*. Cambridge: MIT Press.
- Fisch, Max. 1986a. Peirce and Leibniz. In Kenneth Ketner and Christian Kloesel (eds.) *Peirce, Semeiotic, and Pragmatism: Essays by Max H. Fisch*, 249–260. Bloomington: Indiana University Press.
- Fisch, Max. 1986b. Hegel and Peirce. In Kenneth Ketner and Christian Kloesel (eds.) *Peirce, Semeiotic, and Pragmatism: Essays by Max H. Fisch*, 261–278. Bloomington: Indiana University Press.
- Fiske, John. 1990. *Introduction to Communication Studies*. London: Routledge.
- Forster, Paul. 2011. *Peirce and the Threat of Nominalism*. Cambridge: Cambridge University Press.
- Frankfurt, Harry. 1958. Peirce's Notion of Abduction. *The Journal of Philosophy* 55: 593–597.
- Freydberg, Bernard. 2005. *Imagination and Depth in Kant's Critique of Practical Reason*. Bloomington: Indiana University Press.
- Gambarato, Renira. 2013. Peircean Semiotics in the Context of Design Praxis: Abduction and Perception in Dialogue. *Sign Systems Studies* 41: 424–432.
- Gallie, Walter. 1952. *Peirce and Pragmatism*. Middlesex: Pelican.
- Gare, Arran. 2019. Biosemiotics and Causation: Defending Biosemiotics through Rosen's Theoretical Biology or Integrating Biosemiotics and Anticipatory Systems Theory. *Cosmos and History: The Journal of Natural and Social Philosophy* 15 (1): 31–90.
- Gauvin, Mary. 2001. *The Social Context of Cognitive Development*. New York: Guildford Press.
- Glendinning, Simon. 2007. *In the Name of Phenomenology*. Abingdon: Routledge.
- Glock, Hans-Johann. 1986. Vygotsky and Mead on the Self, Meaning and Internalisation. *Studies in Soviet Thought* 31 (2): 131–148.
- Goetzmann, William. 1973. *The American Hegelians: An Intellectual Episode in the History of Western America*. New York: Alfred Knopf.
- Greenlee, Douglas. 1973. *Peirce's Concept of the Sign*. The Hague: Mouton.
- Hacking, Ian. 1999. *The Social Construction of What?* Cambridge, Massachusetts: Harvard University Press.
- Harris, James and Kevin Hoover. 1980. Abduction and the New Riddle of Induction. *Monist* 63 (3): 329–341.
- Hodge, Robert; Kress, Gunther. 1988. *Social Semiotics*. London: Polity Press.
- Hoffmeyer, Jesper. 1996. *Signs of Meaning in the Universe*. Bloomington: Indiana University Press.
- Hookway, Christopher. 1985. *Peirce*. London: Routledge & Kegan Paul.
- Hookway, Christopher. 2004. Truth, Reality and Convergence. In Cheryl Misak (ed.) *The Cambridge Companion to Peirce*, 127–149. Cambridge: Cambridge University Press.
- Hookway, Christopher. 2012. *The Pragmatic Maxim: Essays on Peirce and Pragmatism*. Oxford: Oxford University Press.

- Houlgate, Stephen. 2005. *An Introduction to Hegel: Freedom, Truth and History*. Oxford: Blackwell Publishing.
- Houser, Nathan. 1987. Towards a Peircean Semiotic Theory of Learning. *American Journal of Semiotics* 5: 251–274.
- Hume, David. 2007. *An Enquiry Concerning Human Understanding*. London: Penguin Classics.
- Ibri, Ivo Assad. 2014. The Continuity of Life: On Peirce's Objective Idealism. In Vinicius Romanini and Eliseo Fernández (eds.) *Peirce and Biosemiotics: A Guess at the Riddle of Life*, eds. 33–49. Dordrecht: Springer.
- Inwood, Michael. 1992. *A Hegel Dictionary*. Oxford: Blackwell Publishers.
- James, William. 1908. *Pragmatism: A New Name for Some Old Ways of Thinking*. London: Longmans, Green and Co.
- Jappy, Tony. 2013. *Introduction to Peircean Visual Semiotics*. London: Bloomsbury.
- Jensen, Kipton. 2004. Peirce as Educator: On Some Hegelisms. *Transactions of the Charles S. Peirce Society* 40 (2): 271–288.
- Kaag, John. 2011. Hegel, Peirce and Royce on the Concept of Essence. *Dialogue* 50 (3): 557–575.
- Kant, Immanuel. 1781/1998. *Critique of Pure Reason*. Cambridge: Cambridge University Press.
- Kent, Beverley. 1977. Objective Logic in Peirce's Thought. *Transactions of the Charles S. Peirce Society* 13(2): 142–146.
- Kozulin, Alex. 1990. *Vygotsky's Psychology: A Biography of Ideas*. New York: Harvester Wheatsheaf.
- Kozulin, Alex. 1996. The Concept of Activity in Soviet Psychology: Vygotsky, his Disciples and Critics. In Harry Daniels (ed.) *An Introduction to Vygotsky*, 99–122. Hove: Routledge.
- Kress, Gunther and Van Leeuwen, Theo. 1996. *Reading Images; The Grammar of Visual Design*. Abingdon: Routledge.
- Kripke, Saul. 1980. *Naming and Necessity*. Oxford: Basil Blackwell.
- Kull, Kalevi. 2010. Umwelt and Modelling. In the *Routledge Companion to Semiotics*, ed. Paul Cobley, 43–56. London: Routledge.
- Kull, Kalevi. 2018. Umberto Eco on the Biosemiotics of Giorgio Prodi. *Sign Systems Studies* 46 (2): 352–364.
- Lagerlund, Henrik. 2007. *Representation and Objects of Thought in Medieval Philosophy*. Aldershot: Ashgate Publishing Limited.
- Lane, Robert. 2018. *Peirce on Realism and Idealism*. Cambridge: Cambridge University Press.
- Latour, Bruno. 1993. *We Have Never Been Modern*. Cambridge MA: Harvard University Press.
- Lave, Jean; Wenger, Etienne. 2005 Practice, Person, Social World. In Harry Daniels (ed.) *An Introduction to Vygotsky*, 143–150. London: Routledge.
- Lee, Benjamin. 1985. Intellectual Origins of Vygotsky's Semiotic Analysis. In James Wertsch (ed.) *Culture, Communication and Cognition: Vygotskian Perspectives*, 66–93. Cambridge: Cambridge University Press.
- Lee, Carol. 2005. Signifying in the Zone of Proximal Development. In Harry Daniels (ed.) *An Introduction to Vygotsky*, 248–278. London: Routledge.
- Leibniz, Gottfried. 1686/1989. Correspondence with Arnauld. In Leroy Loemker (ed.) *Gottfried Wilhelm Leibniz: Philosophical Papers and Letters (Vol 2)*, 331–350. Dordrecht: Kluwer Academic Publishers.
- Leibniz, Gottfried. 1693/1951. On Wisdom. In Philip Weiner (ed.) *Leibniz Selections*, 78–79. New York: Charles Scribner.

- Leibniz, Gottfried. 1704/1996. *New Essays on Human Understanding*. Cambridge: Cambridge University Press.
- Leibniz Gottfried. 1705/1951. Considerations on the Principle of Life, and on Plastic Natures, by the Author of the Pre-Established Harmony. In Philip Weiner (ed.) *Leibniz Selections*, 190–198. New York: Charles Scribner.
- Leibniz, Gottfried. 1714/1951. The Principles of Nature and Grace, based on Reason. In Philip Weiner (ed.) *Leibniz Selections*, 522–533. New York: Charles Scribner.
- Linask, Lauri. 2019. Vygotsky's Natural History of Signs. *Sign Systems Studies* 47 (1): 257–304.
- Liszka, James. 1996. *A General Introduction to the Semiotic of Charles Sanders Peirce*. Bloomington: Indiana University Press.
- Locke, John. 1690/1981. *An Essay Concerning Human Understanding*. Collins: Glasgow.
- Loemker, Leroy. 1989. *Gottfried Wilhelm Leibniz: Philosophical Papers and Letters*, Volume 2. Dordrecht: Kluwer Academic Publishers.
- Ma, James. 2014. The synergy of Peirce and Vygotsky as an analytical approach to the multimodality of semiotic mediation. *Mind, Culture and Activity* 21 (4): 374–389.
- Maimon, Salomon. 1790/2010. *Essay on Transcendental Philosophy*. London. Continuum.
- Maritain, Jacques. 1995. *The Degrees of Knowledge*. Notre Dame, Indiana: University of Notre Dame Press.
- Marx, Karl; Engels, Friedrich. 1996. *Collected Works* Volume 35. London: Lawrence and Wishart.
- Mcauliffe, William. 2015. How did Abduction get Confused with Inference to the Best Explanation? *Transactions of the Charles S. Peirce Society* 51 (3): 300–319.
- McCumber, John. 1996. Time in the Ditch: American Philosophy and the McCarthy Era. *Diacritics* 26 (1): 33–49
- McDowell, John. 1994. *Mind and World*. Cambridge: Harvard University Press.
- Merleau-Ponty, Maurice. 2012. *Phenomenology of Perception*. London: Routledge.
- Meshcheryakov, Boris. 2007. Terminology in L.S. Vygotsky's Writings. In Harry Daniels, Michael Cole and James Wertsch (eds.) *The Cambridge Companion to Vygotsky* 155–177. Cambridge: Cambridge University Press.
- Miller, Ronald. 2011. *Vygotsky in Perspective*. Cambridge: Cambridge University Press.
- Misak, Cheryl. 2013. *The American Pragmatists*. Oxford: Oxford University Press.
- Moll, Luis. 2014. *L.S. Vygotsky and Education*. New York: Routledge
- Morris, Charles. 1946. *Signs, Language and Behaviour*. New York: George Braziller.
- Muller, Ralf. 1994. On the Principles of Construction and the Order of Peirce's Trichotomies of Signs. *Transactions of the Charles S. Peirce Society* 30 (1): 135–153.
- Murphey, Murray. 1993. *The Development of Peirce's Philosophy*. Indianapolis: Hackett Publishing Company.
- Nagl, Ludwig. 2014. Peirce on Hegel, Pragmatism and "The Triadic Class of Philosophical Doctrines". In Torkild Thellefsen and Bent Sørensen (eds.) *Charles Sanders Peirce in His Own Words*, 429–436. Berlin: Walter de Gruyter.
- Newman, Fred; Holzman, Lois. 1993. *Lev Vygotsky: Revolutionary Scientist*. London: Routledge.
- Noë, Alva. 2004. *Action in Perception*. Cambridge: The MIT Press.
- Nöth, Winfried. 1995. *Handbook of Semiotics*. Indianapolis: Indiana University Press.
- Nöth, Winfried. 1998. Ecossemiotics. *Sign Systems Studies* 26: 332–343.
- Nöth, Winfried. 2000. Umberto Eco's Semiotic Threshold. *Sign Systems Studies* 28: 49–61.

- Nöth, Winfried. 2010. The Semiotics of Teaching and the Teaching of Semiotics. In Inna Semetsky (ed.) *Semiotics, Education, Experience*, 1–20. Rotterdam: Sense Publishers.
- Nöth, Winfried. 2014a. The Life of Symbols and Other Legisigns: More than a Mere Metaphor? In Vinicius Romanini and Eliseo Fernández (eds.) *Peirce and Biosemiotics: A Guess at the Riddle of Life*, 171–182. Dordrecht: Springer.
- Nöth, Winfried. 2014b. Signs as Educators: Peircean Insights. In Inna Semetsky and Andrew Stables (eds.) *Pedagogy and Edusemiotics*, 7–18, Rotterdam: Sense Publishers.
- Nöth, Winfried. 2020. Trajectory: A Model of the Sign and of Semiosis. *Sign Systems Studies* 48: 182–191.
- Ogden, Charles; Richards, Ivor. 1989. *The Meaning of Meaning*. London: Harvest.
- Olteanu, Alin. 2015. *Philosophy of Education in the Semiotics of Charles Peirce: A Cosmology of Learning and Loving*. Oxford: Peter Lang.
- Osborne, Thomas. 2010. The Concept as a Formal Sign. *Semiotica* 179 (1): 1–21.
- Oxford English Dictionary. 1989. Oxford: Clarendon Press.
- Pablé, Adrian. 2020. Integrating Biosemiotics: From a Semiological Point of View. *Signs Systems Studies* 48: 125–145.
- Pasnau, Robert. 2002. Cognition. In Thomas Williams (ed.) *The Cambridge Companion to Duns Scotus*, Cambridge, 285–311. Cambridge University Press.
- Pattee, Howard. 2001. The Physics of Symbols: Bridging the Epistemic Cut. *BioSystems* 60: 5–21.
- Pattee, Howard. 2007. The Necessity of Biosemiotics: Matter-Symbol Complementarity. In Marcello Barbieri (ed.) *Introduction to Biosemiotics*, 115–132 Dordrecht: Springer.
- Pattee, Howard. 2015. Cell Phenomenology: The First Phenomenon. *Progress in Biophysics and Molecular Biology* 119: 460–467.
- Percy, Walker. 1972. Towards a Triadic Theory of Meaning. *Psychiatry*: 35.
- Petrilli, Susan. 2010. Icon. In Paul Cobley (ed.) *The Routledge Companion to Semiotics*, 242. London: Routledge.
- Petrilli, Susan. 2014. *Sign Studies and Semioethics: Communication, Translation and Values*. Berlin: De Gruyter Mouton.
- Phillips, Denis. 1995. The Good, the Bad, and the Ugly: The Many Faces of Constructivism. *Educational Researcher* 24 (7): 5–12.
- Popkewitz, Thomas. 1998. Dewey, Vygotsky, and the Social Administration of the Individual: Constructivist Pedagogy as Systems of Ideas in Historical Spaces. *American Educational Research Journal* 35 (4): 535–70.
- Popper, Karl. 1945. *The Open Society and its Enemies*. London: Routledge and Kegan Paul.
- Proni, Giampaolo. 2015. Umberto Eco and Charles Peirce: A Slow and Respectful Convergence. *Semiotica* 206: 13–35.
- Quine, Willard. 1951. Main Trends in Recent Philosophy: Two Dogmas of Empiricism. *The Philosophical Review* 60 (1): 20–43.
- Randviir, Anti. 2019. From Systematic Semiotic Modelling to Pseudointentional Reference. *Sign Systems Studies* 47 (1): 8–68.
- Ransdell, Joseph. 1976. Another Interpretation of Peirce's Semiotic. *Transactions of the Charles S. Peirce Society* 12 (2): 97–110.
- Ransdell, Joseph. 2013. Kinds of Determinants of Semiosis. *Transactions of the Charles S. Peirce Society* 49 (4): 541–552.
- Rockmore, Tom. 1999. Hegel, Peirce and Knowledge. *The Journal of Speculative Philosophy* 13 (3): 166–184.

- Rodríguez Higuera, Claudio. 2019. Everything seems so Settled Here: The Conceivability of post-Peircean Biosemiotics. *Sign Systems Studies* 47 (3): 420–435.
- Romanini, Vinicius. 2014. Semiosis as a Living Process. In Vinicius Romanini and Eliseo Fernández (eds.) *Peirce and Biosemiotics: A Guess at the Riddle of Life*, 215–239. Dordrecht: Springer.
- Rorty, Richard. 1997. Introduction to Empiricism and the Philosophy of the Mind by Wilfrid Sellars: Cambridge MA: Harvard University Press.
- Rorty, Richard. 1980. *Philosophy and the Mirror of Nature*. Oxford: Basil Blackwell.
- Rorty, Richard. 1982. *Consequences of Pragmatism*. Minneapolis: University of Minnesota Press.
- Rosenthal, Sandra. 1990. Peirce's Ultimate Logical Interpretant and Dynamical Object: A Pragmatic Perspective. *Transactions of the Charles S. Peirce Society* 26 (2): 195–210.
- Rosenthal, Sandra. 1994. *Charles Peirce's Pragmatic Pluralism*. Albany: State University of New York.
- Rosenthal, Sandra. 2004. Peirce's Pragmatic Account of Perception: Issues and Implications. In Cheryl Misak (ed.) *The Cambridge Companion to Peirce*, 193–213. Cambridge: Cambridge University Press.
- Royce, Josiah. 1919/2017. *Lectures on Modern Idealism*. New Haven: Yale University Press.
- Russell, Bertrand. 1959. *My Philosophical Development*. London: Unwin Books.
- Salter, Michael. 1992. Laws of Language in Hegel's Semiology. *International Journal for the Semiotics of Law* 14: 165–180.
- Saussure, Ferdinand de. 2012. *Course in General Linguistics*. London: Forgotten Books.
- Schelling, Friedrich. 1800/1978. *System of Transcendental Idealism*. Trans: Peter Heath. Charlottesville: University Press of Virginia.
- Sebeok, Thomas. 1976. *Contributions to the Doctrine of Signs*. Bloomington: Indiana University Press.
- Sebeok, Thomas. 1994. *An Introduction to Semiotics*. London: Pinter Publishers.
- Sebeok, Thomas and Marcel Danesi. 2000. *The Forms of Meaning: Modelling Systems Theory and Semiotic Analysis*. Berlin: Mouton de Gruyter.
- Sellars, Wilfrid. 1997. *Empiricism and the Philosophy of Mind*. Cambridge MA: Harvard University Press.
- Semetsky, Inna. 2010. Moral Stumbling: When Ethics Recapitulates Ontology. In Inna Semetsky (ed.) *Semiotics, Education, Experience*, (53–70). Rotterdam: Sense Publishers.
- Shapiro, Gary. 1981. Peirce's Critique of Hegel's Phenomenology and Dialectic. *Transactions of the Charles S. Peirce Society* 17 (3): 269–275.
- Sheriff, John. 1994. *Charles Peirce's Guess at The Riddle*. Bloomington: Indiana University Press.
- Short, Thomas L. 1982. Life among the Legisigns. *Transactions of the Charles S. Peirce Society* 18 (4): 285–310.
- Short, Thomas L. 2007. *Peirce's Theory of Signs*. Cambridge: Cambridge University Press.
- Skagestad, Peter. 2004. Peirce's Semeiotic Model of the Mind. In Cheryl Misak (ed.) *The Cambridge Companion to Peirce*, 241–256. Cambridge: Cambridge University Press.
- Spinoza, Benedict. 1955. *On the Improvement of the Understanding*. New York: Dover Publications.
- Spinoza, Benedict. 1677/1996. *Ethics*. London: Penguin Books.



- Stables, Andrew. 2008. *Childhood and the Philosophy of Education: An Anti-Aristotelian Perspective*. London: Continuum International Publishing Group.
- Stables, Andrew. 2010. Semiosis and the Collapse of Mind-Body Dualism: Implications for Education. In Inna Semetsky (ed.) *Semiotics, Education, Experience*, 21–36. Rotterdam: Sense Publishers.
- Stables, Andrew. 2014. Peirce and Rationalism: Is Peirce a Fully Semiotic Philosopher? *Journal of Philosophy of Education* 48 (4): 591–603
- Stern, Robert. 1990. Hegel, Kant, and the Structure of the Object. London: Routledge
- Stern, Robert. 2009. *Hegelian Metaphysics*. Oxford: Oxford University Press.
- Stetsenko, Anna. 2017. *The Transformative Mind: Expanding Vygotsky's Approach to Development and Education*. Cambridge: Cambridge University Press.
- Stewart, Jon. 1996. *The Hegel Myths and Legends*. Evanston Illinois: North Western University Press.
- Stjernfelt, Frederik. 2007. *Diagrammatology: An Investigation on the Borderlines of Phenomenology, Ontology, and Semiotics*. London: Springer Dordrecht.
- Stjernfelt, Frederik. 2014. *Natural Propositions: The Actuality of Peirce's Doctrine of Dicisigns*. Boston: Docent Press.
- Strawson, Peter. 1982. Imagination and Perception. In Ralph Walker (ed.) *Kant on Pure Reason*, 82–99. Oxford: Oxford University Press.
- Tschaepe, Mark. 2014. Guessing and Abduction. *Transactions of the Charles S. Peirce Society* 50 (1): 115–138.
- Townsend, H.G. 1928. The Pragmatism of Peirce and Hegel. *The Philosophical Review* 37 (4): 297–303.
- Turrisi, Patricia. 1990. Peirce's Logic of Discovery: Abduction and the Universal Categories. *Transactions of the Charles S. Peirce Society* 26 (4): 465–497.
- Turrisi, Patricia. 1997. Pragmatism as a Principle and Method of Right Thinking: The 1903 Harvard Lectures on Pragmatism. Albany: State University of New York Press.
- Valsiner, Jaan and René Van der Veer. 2000. *The Social Mind: Construction of the Idea*. Cambridge: Cambridge University Press.
- Van der Veer, René and Jaan Valsiner. 1991. *Understanding Vygotsky: A Quest for Synthesis*. Oxford: Blackwell Publishers.
- Vološinov, Valentin. 1973. *Marxism and the Philosophy of Language*. Cambridge MA: Harvard University Press.
- Wertsch, James. 1991. *Voices in the Mind: A Sociological Approach to Mediated Action*. Cambridge MA: Harvard University Press.
- Wertsch, James. 1996. The Role of Abstract Rationality in Vygotsky's Image of Mind, In Anastasia Tryphon and Jacques Voneche (eds.) *Piaget-Vygotsky: The Social Genesis of Thought*, 25–44. Hove: Psychology Press.
- Wertsch, James. 2007. Mediation. In Harry Daniels, Michael Cole and James Wertsch (eds.) *The Cambridge Companion to Vygotsky*, 178–192. Cambridge: Cambridge University Press.
- Wheeler, Wendy. 2006. *The Whole Creature: Complexity, Biosemiotics and the Evolution of Culture*. London: Lawrence & Wishart.
- Whitehead, Alfred. 1995. *Science and the Modern World*. London: Free Association Books.
- Winfield, Richard. 2006. *From Concept to Objectivity: Thinking Through Hegel's Subjective Logic*. Aldershot: Ashgate.
- Wittgenstein, Ludwig. 2009. *Philosophical Investigations*. Chichester: Wiley-Blackwell.



- Wood, David and Bruner, Jerome and Ross, Gail. 1976. The Role of Tutoring in Problem Solving. *Journal of Child Psychology and Psychiatry* 17: 89–100.
- Wood, Robert. 2008. Hegel's Semiotics: Situating Creative Imagination and the Sign (Encyclopedia Philosophy of Spirit (456–460). *Semiotics: Yearbook of the Semiotic Society of America*, 607–616.
- Wouter, Goris; Aertsen, Jan. 2019. Medieval Theories of Transcendentals. <https://plato.stanford.edu/entries/transcendentals-medieval>.



# Index

- Abduction 53, 197–214, 216  
Absolute Idealism 66, 73, 103, 173, 198, 217  
Abstraction 78, 143, 183–186, 208  
Acton, Harry 72  
Adequate Ideas 65–67, 204  
Aertsen, Jan 68, 111  
Agapism 173, 174  
Almeder, Robert 48, 205  
Amalgam 74, 125, 127, 128, 168, 194, 217  
Analytic Truth 170, 203–206, 216, 224  
Andacht, Fernando 102, 137, 143  
Antimonies 158  
Apel, Karl-Otto 6, 200  
Aristotle 21, 124  
Arnould, Antoine 204  
Associationism 57, 58, 125  
Associative Axis 34–36  
Atomism 4, 57, 181  
Argument 133–135, 137, 172–174  
Ayer, Alfred 5, 29
- Bakhurst, David 9, 10, 70, 184, 185, 225  
Barbieri, Marcello 39, 43, 44, 174  
Barthes, Roland 21, 35–38, 42, 212  
Basquity 36  
Baudrillard, Jean 25  
Bellucci, Francesco 69, 169, 204  
Bennett, Jonathan 35  
Berger, Peter 27  
Bergman, Mats 168  
Berkeley, George 35  
Bernstein, Richard 4, 5, 198  
Bestimmen 7, 100  
Bidell, Thomas 115  
Bildung 204, 225  
Biosemiotics 38–45, 64, 69, 135, 171, 172, 174–178, 217  
Blunden, Andy 10  
Boler, John 54, 77, 80, 96  
Brandom, Robert 5, 47, 48  
Breadth and Depth 2, 19, 20, 223  
Brier, Søren 41  
Bruner, Jerome 120, 122, 126, 184, 189, 190, 219
- Burks, Arthur 210  
Burns, Tony 8
- Campbell, Cary 43, 219  
Carlson, David 70  
Categories 2, 3, 6, 9, 12, 16, 31, 42, 47, 74, 76–90, 107, 109–112, 116, 128, 131–137, 164, 206, 214, 219  
Causation 25, 27, 64, 88, 89, 99, 100, 155  
Caygill, Howard 98  
Chandler, Daniel 143  
CHAT 120  
Chiasson, Phyllis 199  
Clear Ideas 67, 203  
Cobley, Paul 40–42, 48, 146, 172  
Codes 36, 37, 43, 44, 86, 141, 174, 177, 179, 205  
Cole, Michael 120–122  
Communication 13, 14, 42, 119, 155, 165, 166, 168, 169, 183, 188–191  
Community of Inquirers 206, 207  
Commutation Test 35  
Complexes (Vygotskian) 180–183, 187, 188, 193  
Confused Ideas 65, 67, 68  
Consensus 163, 206, 207  
Cooke, Elizabeth 210  
Corrington, Robert 159, 161  
Cultural Psychology 122
- Daniels, Harry 10, 119, 120, 124, 190  
Davis, William 199  
Dea, Shannon 200  
Deacon, Terrence 131–134  
Definitions, Nominal 68, 205  
Definitions, Real 68, 213  
Determination 49, 64, 100–102, 159, 164, 181, 216  
De Waal, Cornelis 100  
Deely, John 13, 39–41, 48, 64, 98, 99, 111, 132, 135, 154, 155  
Delaney, Cornelius 141  
Deledalle, Gérard 91, 105  
Deleuze, Gilles 104

- Derrida, Jacques 7, 8  
 Derry, Jan 10, 11, 29, 69  
 Descartes, René 22, 23, 67, 81  
 Dewey, John 132, 133, 203  
 Diagrams 142, 146–148, 161, 171  
 Diagrammatology 146–149  
 Dialecticism 1, 12, 22, 55, 68, 70–75, 78,  
     114–117, 128, 131, 137, 153, 158, 190,  
     205, 216, 217, 219  
 Dialectical Logic 117  
 Dialectical Psychology 9, 114–116, 184, 187  
 Dicisign 133, 134, 169–173, 175  
 Direct Acquaintance 5, 24, 29, 40, 104  
 Discourse 26, 47, 165, 166, 168, 169, 206, 224  
 Distinct Ideas 67–69, 157, 203, 220  
 Double Stimulation 127  
 Duns Scotus 68, 96, 99  
  
 Eco, Umberto 17, 36–38, 86, 87, 144, 145,  
     151, 175–177  
 Edwards, Anne 11  
 Edusemiotics 217, 218  
 Emundts, Dina 198  
 Engels, Friedrich 3, 116  
 Epistemic Cut 178  
 Essence 8, 15, 23, 28, 36, 59, 70–75, 83, 84,  
     90, 113, 137, 141, 149–153, 155, 183, 184  
  
 Fabbrichesi, Rossella 69  
 Fallibilism 53, 108, 206  
 Feibleman, James 133  
 First/Firstness 64, 76–80, 110, 112, 134, 142,  
     150, 169, 205  
 Fisch, Max 6, 93  
 Fiske, John 141, 159  
 Fonseca, Pedro da 154–156, 183  
 Form 15, 16, 28–30, 58, 64, 71, 72, 84, 97,  
     112, 141, 145, 153–156, 182–184, 187,  
     188, 191–194, 202, 216, 217, 220, 224  
 Forster, Paul 27, 48, 53, 205, 206  
 Foundationalism 29  
 Frankfurt, Harry 211  
 Freydberg, Bernard 154  
  
 Gambarato, Renira 212  
 Gallie, Walter 52, 53, 79  
  
 Gare, Arran 64, 177  
 Gauvin, Mary 189  
 Gegenstand 98, 99, 108  
 German Idealism 4, 7, 12, 22, 63, 64, 108,  
     151  
 Glendinning, Simon 26  
 Glock, Hans-Johann 11  
 Goetzmann, William 3, 132  
 Greenlee, Douglas 92, 105  
  
 Habits 38, 88, 155, 201  
 Hacking, Ian 27  
 Harris, James 209, 210  
 Hegel, Georg Wilhelm  
   – Absolute Idea 66, 73, 103, 173, 198, 217  
   – Marx 115–116  
   – Antimonies 158  
   – Constructivism 50, 75  
   – Dialecticism 72–74  
   – Essence 70–74  
   – *Gegenstand* 98, 99, 108  
   – History of his thought 2–5, 22, 29, 30, 63  
   – Indeterminacy 70, 78, 181  
   – Mediation 74, 75, 90  
   – Notion 15, 50, 66, 67, 73–76, 83–84,  
     88–91, 113, 137, 205, 215  
   – Perception 46–48, 50  
   – Object 97, 98  
   – Sense certainty 46, 98  
   – Speculative philosophy 3, 13–15, 72, 150  
   – Sublation 9, 43, 73, 113, 161, 162, 185  
   – Truth 205, 206  
 Hodge, Robert 159  
 Hoffmeyer, Jesper 17, 38–40, 42–44, 175,  
     223, 224  
 Holzman, Lois 189, 191  
 Hookway, Christopher 92, 100, 132, 157, 201,  
     202  
 Hoover, Kevin 209, 210  
 Houlgate, Stephen 206  
 Houser, Nathan 197, 198  
 Hume, David 2, 22, 25, 28, 31, 34, 46, 151,  
     156  
 Hypoicons 142, 143, 146, 147, 171  
 Hypothesis 32, 53, 74, 83, 95, 101, 102, 135,  
     150, 157, 162, 209–213

- Ibri, Ivo Assad 64, 82  
 Icon/Iconicity 30, 72, 106, 109, 111, 133, 137, 138, 141–155, 158–163, 171, 177, 182, 184, 188, 193, 208–213, 218, 221–224  
 Ideology 4, 25, 37  
 Imagination 77, 102, 145, 153, 154, 191–193, 211, 224  
 Inadequate Ideas 65  
 Indeterminacy 30, 46, 52, 54, 55, 63, 66, 70, 75, 80, 82, 87, 91, 101, 102, 107, 116, 131, 134, 149, 153, 169, 182, 206  
 Index 30, 133–135, 138, 141, 153, 154, 156–159, 163, 170, 177  
 Induction 25, 210, 213  
 Interiorisation 120, 122, 126, 184, 190  
 Interpretant 16, 17, 43, 44, 74, 90–95, 100, 104, 106–113, 131–135, 162, 169, 170, 173, 176, 185  
 Interpretation 12, 14, 17, 28, 31, 32, 34, 36, 40–44, 51, 64, 66, 72, 85–90, 106–109, 145, 163–165, 174–178, 205, 216, 223, 225  
 Intuitionism 8, 96, 97, 102, 110–112, 145  
 Inwood, Michael 74, 75, 98  
  
 James, William 197–200  
 Jappy, Tony 92, 93, 94, 100, 139  
 Jensen, Kipton 4, 7  
  
 Kaag, John 4, 84  
 Kant, Immanuel 1–3, 12, 22, 49, 63, 76, 96–102, 105, 108, 109, 111, 112, 132, 144, 145, 153, 154, 158, 193, 204, 205  
 Kent, Beverley 16  
 Kharkov School 118  
 Kozulin, Alex 10, 118, 186  
 Kress, Gunther 10, 38, 159  
 Kripke, Saul 207–209  
 Kull, Kalevi 40–43, 219  
  
 Lagerlund, Henrik 99  
 Lane, Robert 103, 207  
 Langue 34, 37  
 Latour, Bruno 26  
 Lave, Jean 122  
 Learning Theory 2, 179, 197, 215–222  
  
 Lee, Benjamin 115, 116  
 Lee, Carol 115, 119  
 Legisign 133, 134, 137, 139  
 Leibniz, Gottfried 27, 63–79, 103, 104, 152, 157, 173, 174, 203, 204, 216, 220, 221  
 Linask, Lauri 56, 123, 125, 179  
 Linguistic Turn 1, 5  
 Liszka, James 101, 105, 139, 209  
 Locke, John 2, 27, 31, 35, 46, 72, 76  
 Loemker, Leroy 69  
 Logical Positivism 5, 29  
 Luckmann, Thomas 27  
  
 Ma, James 94, 115, 119  
 Maimon, Salomon 63, 97, 102, 112, 204  
 Maritain, Jacques 99  
 Marx, Karl 3, 115, 116  
 Mcauliffe, William 212  
 McCarthyism 5  
 McCumber, John 5  
 McDowell, John 5, 24, 47, 53, 225  
 Mediation 8, 10, 22, 46, 47, 59, 63, 64, 71, 74, 75, 83, 92, 94, 102, 114–128, 147, 148, 179, 216, 217  
 Memory 41, 121, 187  
 Merleau-Ponty, Maurice 21, 40, 54, 80  
 Meshcheryakov, Boris 70  
 Miller, Ronald 121, 190  
 Mirror of Nature 23–32, 34, 39, 42, 44, 106, 141, 142, 225  
 Misak, Cheryl 200, 209, 210  
 Modelling 41, 42  
 Moll, Luis 124, 189  
 Monad 66, 68, 76, 112, 133–135, 145, 173, 203  
 Morris, Charles 142  
 Mugwump 212, 213  
 Muller, Ralf 135, 136  
 Murphey, Murray 54, 109, 152, 153  
 Myth 36  
 Myth of the Given 5, 29, 30, 35, 46, 49, 215  
  
 Nagl, Ludwig 7, 83, 198  
 Natural History of the Sign 11–17, 102, 135, 159, 162, 163, 168, 171, 179–188, 217, 219, 222, 226

- Natural Perceptions 16, 56, 58, 114, 180, 181, 185, 187, 191, 224
- Newman, Fred 189, 191
- Noë, Alva 21, 30, 31, 80, 176
- Nominal Definitions 27, 68, 69, 103, 203, 205, 220
- Nominalism 6, 23, 24, 27, 28, 48–51, 66–69, 76–79, 82, 84, 85, 89, 97, 138, 145, 155, 160, 171, 192, 213, 214, 216, 222, 224
- Nöth, Winfried 12, 37, 133, 139, 177, 218, 160, 169
- Object, Dynamic 68, 102–106, 112, 164, 203
- Object, Immediate 68, 102–106, 112, 164, 203
- Object, in the sign 30, 96–99, 101–113, 134–142, 147, 150–161, 168–171, 174–177, 185, 193, 198, 207–209, 219, 224
- Objectivity 8, 73, 80, 166, 173, 203
- Objective Idealism 7, 40, 64, 82
- Objekt 98, 99, 108
- Ogden, Charles 93, 94
- Olteanu, Alin 43, 80, 133, 134, 173, 218, 219
- Osborne, Thomas 155
- Outward Clash 82, 83, 164
- Pablé, Adrian 41
- Pasnau, Robert 99
- Pathways 155, 185, 191
- Pattee, Howard 44, 178
- Peirce
- Abduction 209–214
  - Agapism 173–174
  - Arguments 172–174
  - Biosemiotics 42–45, 174–178
  - Determination 100–102
  - Dynamic object 102–106
  - Fallibilism 53, 108, 206
  - Firstness 76–79
  - Freedom 222–226
  - Habits 38, 88, 155, 185, 201
  - Hypoicon 142–143
  - Icon 72, 106, 111, 138, 141–156, 193, 208–213, 221–224
  - Immediate object 102–106
  - Index 141, 156–159, 163, 170, 177
  - Indeterminacy 90–92, 100–102
  - Interpretant 106–113
  - Learning theory 217–222
  - Legisign 138–140
  - Nominalism 49–50
  - Objective idealism 7, 40, 64, 82
  - Object (of thought) 92–102
  - Outward clash 82–83, 164
  - Percept 50–53, 77, 91, 138, 151
  - Perception 48–55
  - Perceptual judgment 52–54
  - Pragmatism 197–202
  - Proposition 169–174
  - Qualisigns 138–140
  - Representamen 90–92
  - Rheme 168–169
  - Scaffolding 217–222
  - Secondness 79–84
  - Semiosis 163–166
  - Sign Classification 131–138
  - Sinsign 138–140
  - Speculative grammar 13–17, 72, 136, 150, 171, 202
  - Speculative rhetoric 13, 136, 146, 165, 168
  - Symbol 159–167
  - Thirdness 84–89
  - Truth 203–209
  - Universals 52, 54, 78
- Percept 50–53, 77, 91, 138, 151
- Perception 21–32, 46–59, 65–67, 70, 80, 84–87, 90, 91, 100, 101, 104, 114, 127, 131, 145, 179–181, 185, 214
- Perceptual Judgment 51–53, 77, 87, 176
- Percy, Walker 197
- Perfect Idea 68, 203, 221
- Petrilli, Susan 43, 143
- Phaneron 49, 76, 103, 151
- Phenomenology 26, 40, 50, 73
- Phillips, Denis 224
- Piaget 115, 126
- Placeholders 208, 209
- Play 55, 154, 188, 191–193
- Poinsot, John 99, 154, 155
- Popkewitz, Thomas 119
- Popper, Karl 5, 210

- Positing 64, 66, 71–75, 90, 95, 137, 141, 145, 150, 152, 156, 159, 162, 168, 174–177, 184, 185, 190, 193, 209, 216, 217
- Postmodernity 26, 215
- Pragmatic Maxim 198–205
- Pragmatism 6, 11, 47, 65, 155, 187, 197–202, 209, 213, 216, 226
- Prescision 77–79
- Predicates 101, 148, 156, 171, 204, 205, 208, 211–214, 220
- Primary Dualism 22, 31, 39, 42, 215
- Proni, Giampaolo 105
- Propositions 52, 53, 133–135, 137, 168–172, 204, 207
- Pseudoconcepts 182–184
- Purity 153
- Qualisign 133, 134, 136, 138, 139, 151, 169
- Qualification 221, 222
- Quine, Willard 206
- Randviir, Anti 41
- Ransdell, Joseph 155, 159
- Real Definitions 27, 68, 69, 173, 201, 203, 213
- Reference 16, 34, 93, 94, 139, 171, 208
- Relational Reality 22, 29, 38, 64–69, 71, 73, 79, 103–105, 134, 166, 202, 203, 204, 213, 215, 218
- Relativism 41, 104, 175
- Representamen 53, 74, 90–92, 94, 95, 99, 101, 107–112, 131–135, 138, 142, 149, 161, 176
- Rheme 133, 134, 169, 179
- Richards, Ivor 93, 94
- Rigid Designation 208, 209
- Rockmore, Tom 7
- Rodríguez Higuera, Claudio 38, 175
- Romanini, Vinicius 40, 82, 163, 201
- Rorty, Richard 23, 28, 29, 200, 225, 226
- Rosenthal, Sandra 51, 161, 202
- Ross, Gail 189
- Royce, Josiah 3, 4, 7
- Russell, Bertrand 4, 5, 29
- Salter, Michael 8
- Saussure, Ferdinand de 8, 21, 33–38, 82, 91, 102, 212
- Scaffolding 188, 189, 217–222
- Schelling, Friedrich 64, 108, 109, 151
- Schema 108–111, 144, 145, 151, 154
- Science 26, 39, 50, 68, 116, 175, 177, 178, 207, 209, 215, 218
- Sebeok, Thomas 142, 144
- Secondary Qualities 76, 77, 79, 90
- Second/Secondness 6, 30, 42, 64, 67, 72, 74, 76, 79–88, 101–103, 121, 128, 133–135, 140, 153, 157, 159, 163, 168–172, 175, 187, 202, 205–207, 210, 216, 219, 220
- Sellars, Wilfrid 5, 29–31, 49
- Semetsky, Inna 80
- Semiology 7, 8, 12, 14, 21, 86, 140, 159
- Semiosis 17, 38, 43, 64, 90, 91, 107, 131, 136, 163, 164, 214, 216
- Semiotic Freedom 222–226
- Sense Certainty 46, 98
- Shapiro, Gary 7
- Sheriff, John 133, 134
- Short, Thomas 53, 77, 100, 101, 104, 105, 132, 155, 208
- Sign Classification 12, 16, 131–140, 145, 150, 160, 165, 168, 170, 172, 201
- Signifieds 8, 34
- Signifiers 8, 34
- Sign Vehicles 14, 39, 91, 141, 162
- Sinsign 133–139, 169
- Skagestad, Peter 106
- Social Constructivism 1, 9, 10, 27, 41, 42, 44, 48, 50, 85, 87, 114, 118, 119, 145, 167, 168, 174, 175, 179, 188, 190, 194, 205, 207, 215
- Social Semiotics 37, 38
- Speculative Grammar 13, 14, 17, 72, 136, 150, 171, 202
- Speculative Rhetoric 13, 14, 136, 146, 165, 168
- Speech 55–59, 75, 114, 116, 119, 122, 125–127, 182, 184, 187, 191, 193, 194, 217, 222
- Spinoza, Benedict 10, 63–70, 79, 115, 204, 216

- Stables, Andrew 189, 218, 224  
 Stern, Robert 6–8, 97, 158  
 Stetsenko, Anna 120  
 Stewart, Jon 1  
 Stimulus and Response 58, 118, 185, 193  
 Stjernfelt, Frederik 106, 132, 133, 143,  
     145–148, 156, 165, 169–172, 175  
 Strawson, Peter 154  
 Subjective 25, 33, 39, 41, 42, 47, 64, 68, 82,  
     108, 133, 166, 171, 181, 200, 215, 216,  
     222, 224  
 Sublation 9, 43, 64, 73, 109, 112, 113,  
     137, 161, 162, 164, 176, 185, 188, 194,  
     219, 221  
 Symbol 8, 16, 93, 133–138, 141, 143,  
     159–169, 193, 219  
 Synechism 31, 49, 55, 181, 216  
 Synthetic Reality 42, 74, 76, 102, 124, 125,  
     127, 166, 168, 171, 175, 177, 179, 203,  
     205, 214, 216, 217, 224  
  
 Third/Thirdness 14, 64, 84–89, 107–113,  
     134–137, 142, 146, 148, 157, 161, 162,  
     165, 168–170, 172, 174, 179, 188,  
     198, 216  
 Thresholds, Semiotic 38, 45, 174–178  
 Tools, Semiotic 65, 75, 123, 157, 159, 161,  
     186, 187, 189  
 Triadic Structure 7, 17, 38, 43, 74–76, 83,  
     84, 86, 90, 92–95, 109–113, 132–135,  
     138, 197, 217  
 Tschaepe, Mark 211  
 Townsend, Harvey 7  
 Truth 10, 38, 46, 104, 108, 166, 172, 173,  
     200, 202–209, 211, 214, 216, 224  
 Turrisi, Patricia 200, 211, 214  
  
 Umwelt 38–45, 174–178  
 Universals 28, 35, 54, 72, 73, 97, 117, 158,  
     204, 205  
  
 Vagues, Perceptual 12, 49, 53, 54, 81, 85,  
     91, 95, 101, 131, 134, 135, 138, 139, 150,  
     165, 181  
 Valsiner, Jaan 9, 114, 123  
  
 Van der Veer, René 9, 114, 123  
 Van Leeuwen, Theo 38  
 Verbalised Perceptions 48, 56, 187  
 Vološinov, Valentin 37, 38, 42  
 Vygotsky, Lev  
     – Associationism 22, 57, 58  
     – Complexes 180–183, 187, 188, 193  
     – Dialectical psychology 114–117, 184  
     – Imagination 191–193  
     – Interiorisation 120, 122, 126, 190  
     – Learning process 217–222  
     – Marx 115–116  
     – Mediation 117–128  
     – Memory 187, 188  
     – Natural history of the sign 102, 135, 162,  
         163, 168, 179–188, 217, 219, 222  
     – Natural perceptions 55, 56  
     – Perception 55–59  
     – Play 55, 154, 191–193  
     – Pseudoconcepts 182–184  
     – Scaffolding 188–189, 217, 219, 221, 222  
     – Social constructivism 119–128  
     – Sublation 185, 188, 194  
     – Verbalised perceptions 48, 56  
     – Word meaning 124–126  
     – Zone of proximal development  
         (ZPD) 188–194  
  
 Web of Being 39, 43, 66–69, 73, 85, 103,  
     106, 173, 174, 203, 214, 215  
 Welby, Lady 88, 99, 104, 155  
 Wenger, Etienne 122  
 Wertsch, James 10, 115, 117, 120–122  
 Wheeler, Wendy 38, 40, 68, 223, 224  
 Whitehead, Alfred 29  
 Winfield, Richard 205, 206  
 Wittgenstein, Ludwig 5  
 Wood, David 189  
 Wood, Robert 8  
 Word Meaning 75, 114, 121–125, 180–184,  
     187, 209, 217, 224  
 Wouter, Goris 111  
  
 Zone of Proximal Development 188–192