Peirce in contemporary semiotics

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Introduction

Given the voluminous nature of his writings, it is hardly surprising that there are many Peirces. There is the Peirce of the *Collected Papers*, there is the Peirce of the chronological edition of the *Writings*, there is the Peirce of the magazine articles for such outlets as *The Nation*, as well as the Peirce of the encyclopedia and journal entries he wrote, plus the Peirce of regular contributions to journals such as *The Monist*. These overlap with the biographical Peirce: the son of Benjamin, a leader at the US Coast and Geodetic Society, the figure who haunts "The Metaphysical Club", the scandalous Peirce, the father of pragmatism, the Peirce rendered by Brent's (1993) pioneering biography, and many more. Similarly overdetermined is the Peirce of semiotics.

It is well known that Peirce spent at least the last twenty years of his writings explicitly concerned with semiotics. Likewise, during the same period, he forged pragmaticism, especially from 1905 onwards. For many, both pragmaticism and semiotics are contained within a major over-arching project which Peirce pursued – not without revisions – in his philosophy, particularly after presenting his 1867 paper, "On a new list of categories'. Yet the fortunes of Peirce's semiotics cannot only be sought in his own writing and endeavour. As Peirce well recognized in his avowal that he was "a backwoodsman, in the

work of clearing and opening up what I call semiotic, that is, the doctrine of the essential nature and fundamental varieties of possible semiosis; and I find the field too vast, the labor too great, for a first-comer." (c.1906: CP 5.488), the massive interdisciplinary task of semiotics must be a collective one, left to the community of inquirers. To search for the Peirce of Peircean semiotics, then, it is necessary to consider the vexed history of Peirce's own writings on signs, but also those of his posthumous interpreters and interlocutors. It is possible that those tangled skeins can never be unravelled. Certainly, much of what has been considered to be semiotics, Peircean or otherwise, cannot be undone. However, the current volume offers a chance to state the current situation and the present essay will attempt to offer a sketch of the different Peirces that have contributed to the chimera of contemporary semiotics.

Those Peirces are to be found in his own works as they have come to light. Yet that "coming to light" has often been a "rediscovery" of work that has been in the public sphere but has not been considered. Scholars in semiotics over the last fifty years have done much to rediscover or make apparent the major contributions to knowledge of Peirce's writings. Sometimes this has involved making explicit what might have been only implicit over many pages of Peirce's work. I have previously written about this process very briefly, in respect of the concept of subjectivity and "the self" (Cobley 2014). In the present essay, I will refer specifically to the theory of signs that has been derived from Peirce, focusing largely chronologically on the endeavour of key semioticians: Jakobson, Eco, Fisch, Ransdell, Sebeok, Merrell, Nöth, Petrilli, Deely and Stjernfelt, building on the evolving scholarship that has made Peirce's writings available. These works are very different in orientation, often focusing on some beaten path or some by-way of Peirce's semiotics. There are also some necessary omissions in the account: in particular, the works of Morris, Deledalle, Santaella-

Braga and Houser. Apologies for this must be offered and a hope that the narrative thread is maintained.

Sign theory and Peirce's writings

The first anthology of Peirce's writings published after his death in 1914 was Morris Cohen's volume, *Chance, Love and Logic: Philosophical Essays* (1923). It contained two books: *Illustrations of the Logic of Science* (c. 1878), containing such essays as "The fixation of belief" and "How to make our ideas clear", plus another, untitled, volume consisting of some of Peirce's contributions to *The Monist* (1891-93), along with an essay on "The pragmatism of Peirce" by John Dewey. The volume does not contain a great deal of explicit discussion of the theory of signs. Yet, in the same year, C. K. Ogden and I. A. Richards published in Britain *The Meaning of Meaning* (1923), "the first book in any language", according to Max Fisch (1986 [1978]: 345) "from which it was possible to get a grasp of Peirce's semeiotic at first hand, in his own terms". Nonetheless, *The Meaning of Meaning* was, for Fisch, not the most auspicious start to Peirce studies. Famously, Peirce had written to Lady Welby on 23 December 1908

> Know that from the day when at the age of 12 or 13 I took up, in my elder brother's room a copy of Whately's *Logic* and asked him what Logic was, and getting some simple answer, flung myself on the floor and buried myself in it, it has never been in my power to study anything, — mathematics, ethics, metaphysics, gravitation, thermodynamics, optics, chemistry, comparative anatomy, astronomy, psychology, phonetics, economic, the history of science, whist, men and women, wine, metrology, except as a study of semiotic . . . (SS: 85-6)

Fisch ([1978] 1986: 345) claims that the 1923 edition of *The Meaning of Meaning* misquotes this passage and that Ogden and Richards call Peirce a "nominalist". However, these crimes are certainly absent from subsequent editions of *The Meaning of Meaning* after the publication of the first six volumes of the *Collected Papers*.

The sources for Peirce's semiotics properly began to emerge in the 1950s. Although the *Collected Papers* had begun its first phase under the editorship of Charles Hartshorne and Paul Weiss from 1931-1935, this was only the start of a long story. As Fisch ([1978] 1986: 346) notes, Charles Morris got his hands on volumes I-VI of the *Collected Papers* before he published *Foundations of the Theory of Signs* in 1938. Arguably, the key volumes for sign theory were VII-VIII (edited by Arthur W. Burks), although volume II had contained another crucial text on sign theory, the "speculative grammar" (CP 2.219ff, 1903). The last two volumes of the *Collected Papers* contained (in Volume VIII), the letters to Lady Welby, where, in an accessible but nevertheless still very complicated manner (see Borges 2016), Peirce laid out his theory of semiotics. The influence of these letters as a founding text in (Peircean) semiotics is not to be underestimated, although, as will be seen, that text has sometimes been diluted and even distorted. Where other texts in the *Collected Papers* may have referred to signs and their components, the letters to Welby lay out an aspirant comprehensive theory of signs. As Borges (2016: 172) notes, there are two letters of special importance in this respect: one for the first period of the Peirce-Welby correspondence, dated 12 October 1904 and one from 23 December 1908, as quoted above. Moreover, "The division of signs presented is the most developed one with two objects and three interpretants" (Borges 2016: 172). The comments in this text are closely related to those in the speculative grammar texts: both present trichotomies of signs and both consider ten classes of signs,

ultimately. In his "Logic notebook", through the years 1869-1905, Peirce drew the following

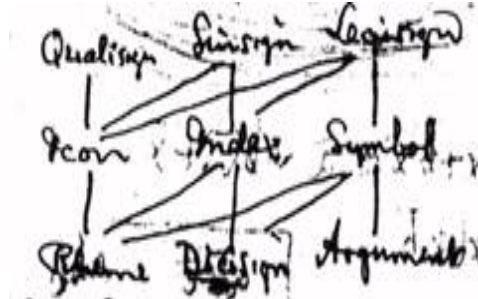diagram of one iteration of his trichotomies (Figure 2.1).

Figure 2.1: 10-sign illustration from MS R339

The extension of these into ten classes of signs then appeared in the speculative grammar

notes, diagrammatized as in Figure 2.2.

These complex perspectives on signs would have been scarcely known in the first part of the twentieth century. Yet, they were to be unleashed on the world in somewhat of a flurry in the 1950s.

At a time when European intellectual life was being permeated by structuralism and, particularly, the influence of Saussure and Barthes in sign theory (see Cobley 2006a, 2006b), Peirce's sign theory must have been quite bewildering. Nevertheless, this did not prevent it from seeing the light of day in a number of book publications, some of them rather neglected or overlooked today. Heralding the second part of the century, and most prominent because it was so early, was Feibleman's *An Introduction to the Philosophy of Charles S. Peirce* (1946). Closely following were Thomas A. Goudge's *The Thought of C. S. Peirce* (1950) and Walter B. Gallie's paperback, *Peirce and Pragmatism* (1952). All three consider Peirce's theory of signs in relation to formal logic. Probably Gallie, in his Chapter 5, is the closest of the three to providing an account of Peirce's general semiotic – as opposed to a restricted discussion of signs in formal logic - that can be recognized as consonant with the endeavour of contemporary semiotics.

Yet, more important for semiotics than these books in the 1950s were the works of Peirce himself that became available. Under the editorship of Irwin C. Lieb, Peirce's side of the correspondence with Lady Welby became available in 1953. Two of these letters were reprinted in the eighth volume of the *Collected Papers* in 1958. Both sides of the correspondence were not to become available in the public sphere until 1977, in Charles Hardwick's volume, *Semiotics and Significs*. Significantly, two philosophers assembled very

useful anthologies of Peirce's writings. Justus Buchler's *The Philosophy of Peirce: Selected Writings* was originally published by Routledge and Kegan Paul in 1940, but re-published as a paperback entitled *Philosophical Writings of Peirce* in 1955. It contained a chapter entitled "Logic as semiotic: the theory of signs", culled from CP 2.227-9, 2.274-302, 2.243-65, 2.304 and 2.305-6, the last two of which comprised Peirce's entries on "Sign" and "Index" for *Baldwin's Dictionary of Philosophy and Psychology*. Philip Wiener's collection, *Values in a Universe of Chance*, was published in 1958, the same year as Burks' volumes VII-VIII of the *Collected Papers*. It contained an excellent range of Peirce's writings, concluding with an edited selection of the letters to Lady Welby which included those of 12 October 1904 and 23 December 1908. So, at this time, the key statements on sign theory by Peirce were available and for, those with a will to study them, were probably quite startling. For those linguists familiar with Saussure before the first translation of his *Cours* into English in 1959, one can only imagine their response when reading at the end of Wiener's volume (1958: 407) that Peirce had envisaged 59,049 classes of signs (CP 8.343).

Trichotomizing and reducing the typology of signs

One of the leading figures in the history of semiotics who knew Saussure's *Cours* well, soon after it was "exported" to Russia in the early 1920s, and who had already cultivated an enduring fascination with Peirce, was Roman Jakobson. It is clear that Jakobson was immersed in Peirce's writings and saw Peircean semiotics as a long project inaugurated by the essay "On a new list of categories" (1867; CP 1.545-59). Jakobson writes ([1975] 1987: 441),

It is notable that, throughout the thinker's whole life, the conception which underlies his continual efforts to establish a science of signs gained in depth and in breadth, and simultaneously remained firm and unified. As for the "semiotic", "semeiotic" or "semeotic" it only surfaces in Peirce's manuscripts at the turn of the century; it is at this time that the theory "of the essential nature and fundamental varieties of possible semiosis" captures the attention of this great researcher (1.44-4; v. 488).

Moreover, Jakobson makes clear that Peirce's work should be seen as being concerned with the "the whole multiplicity of significative phenomena" (1987 [1975]: 442) rather than Jakobson's main area of expertise, language. So, Jakobson was not blinkered by his concerns in linguistics and by no means a novice in Peirce studies.

As an influence on the development of semiotics, it is difficult to overestimate Jakobson's work. His profile was sufficiently prominent that numerous accounts of semiotics which were to be produced in Anglophone academia in the 1970s essentially refracted sign study through a – some might say "crude" - Jakobsonian lens (for example, Hawkes 1977, Coward and Ellis 1978). Certainly, Jakobson seems to be the source for some simplification of the extent of Peirce's classes of signs. Throughout the 1950s and early 1960s he referred to Peirce and Peircean takes on the sign. For example, in his seminal contribution to the *Style in Language* conference and subsequent book, Jakobson (1960) makes the indexical sign pivotal. In some ways, he provided a bridge between the Saussurean and the Peircean traditions of sign theory. This was not necessarily helpful, since there were ways in which the two traditions were incompatible. However, in one of his most influential essays, "Quest for the essence of language" (1965), Jakobson introduced a useful retrospective Latinization of the components of a dyadic conception of the sign. By no means taken up universally, his

coining of "signum comprising both *signans* and *signatum*" (1965: 22), denoting a train of thought articulated after the Stoics, promised to cut through some of the terminological chaos that has been attendant on so many formulations in different areas of semiotics regarding sign-vehicles, objects and referents.

Many of the arguments that preoccupied theorists in the wake of Saussure arose from the problematic of taking the *signans/signatum* distinction as the basis of signhood and focusing on the linguistic sign as the paradigm case of semiosis. Predicated on a triadic theory of the sign, Peirce's approach, especially as revealed in the 1950s, represented an epochal departure in sign study – even if there is a precursor of triadism in John Poinsot during the period of late Latin philosophy. The letters to Lady Welby, on top of the discussions on speculative grammar, presented a trichotomy consisting of a Sign (or "Representamen"); an Object (that which it refers to - either in the mind or in the world); and, the most difficult of the three, an Interpretant. The naming of the latter clearly indicates a desire for distinction from an "interpreter" which, in other sign theories, would be an entity or agency *outside* the sign as a whole. This is the basic difference Peirce's semiotics bears in relation to the Saussurean sign (see Jakobson [1975] 1987: 443). Plus, the complexity is multiplied with another layer in which each component of the sign can map onto one of the three categories of phenomena: so, the Sign/Representamen is Firstness, the Object is Secondness and the Interpretant is Thirdness (CP 2.228; on Peirce's categories, see, especially, the Introduction and Chapter 10, this volume).

The Interpretant, then, is arguably the touchstone of Peircean semiotics in its distinction from other sign theories. One might have thought that Jakobson would have amplified this issue. Yet, he writes in "Quest for the essence of language" (1965: 23) that the

interpretant fits into a scheme of *signum*: 'Peirce likewise makes a clear-cut distinction between the "material qualities", the signans of any sign, and its "immediate interpretant", that is the signatum'. Yet, in Peircean semiotics, the Interpretant is that which the sign produces, its "significate effect" (CP 5.475): it is usually another sign and is usually - but not always - located in the mind. An Interpretant's most important role is in the contribution to a further triad in which it becomes the Sign or representamen, with a subsequent Object and another Interpretant which, in turn, fulfils the same role (potentially *ad infinitum*). This is the process of semiosis, the continual production of meaning through one sign triad leading to another by means of the invocation of new interpretants. The process was beginning to be recognized as an important semiotic phenomenon in the 1950s. Gallie (1952: 120) gives a preliminary example of it by stating that an individual, A, might point at the floor whereupon companion, B, would interpret by looking in that direction, to be followed by C who asks "What are you looking at?" One original sign from A therefore gives rise to two further signs from B and C which have taken a component (the Interpretant) from the signs that precede them.

Moreover, with the mapping of signs in their forms (how they are composed as Firstnesses, Secondnesses and Thirdnesses) and the categories to which they relate in the Universe (again, Firstnesses, Secondnesses and Thirdnesses), Peirce came up with the following designations – in trichotomies – for classes of signs as in MS339, above (Figure 2.1):

	Category		
	Firstness	**Secondness**	**Thirdness**
Respect			

Sign	qualisign	sinsign	legisign
Sign-Object	icon	index	symbol
Sign-Interpretant	rheme	dicisign	argument

Table 2.1. Peirce's three trichotomies of 1903
Table 2.1 about here

There can be no mistaking that there are three sets of three signs here. Yet, Jakobson (1965: 23-4) states only that:

> Signs (or *representamena* in Peirce's nomenclature) offer three basic varieties of semiosis, three distinct, "representative qualities" based on different relationships between the *signans* and the *signatum*. This difference enables him to discern three cardinal types of signs.
>
> 1) Icon acts chiefly by factual similarity between its *signans* and *signatum*, e.g., between the picture of an animal and the animal pictured; the former stands for the latter "merely because it resembles it.'
>
> 2) Index acts chiefly by factual, existential contiguity between its *signans* and *signatum*, and "psychologically, the action of indices depends upon association by contiguity;" e.g., smoke is an index of a fire, and the proverbial knowledge that "where there is smoke, there is fire" permits any interpreter of smoke to infer the existence of fire irrespective of whether or not the fire was lighted intentionally in order to attract someone's attention; Robinson Crusoe found an index: its *signans* was a footprint in the sand, and the inferred *signatum*, the presence of some human creature on his island; the acceleration of pulse as a probable symptom of fever is, in Peirce's view, an index, and in such cases his semiotic actually merges with the

medical inquiry into the symptoms of diseases which is labeled semeiotics,

semeiology or symptomatology.

3) Symbol acts chiefly by imputed, learned contiguity between *signans* and *signatum*. This connection "consists in its being a rule" and does not depend on the presence or absence of any similarity or physical contiguity. The knowledge of this conventional rule is obligatory for the interpreter of any given symbol, and solely and simply because of this rule the sign will be actually interpreted. Originally the word symbol was used in a similar sense also by Saussure and his disciples, yet later he objected to this term because it traditionally involves some natural bond between the signans and signatum (e.g., the symbol of justice, a pair of scales), and in his notes the conventional signs pertaining to a conventional system were tentatively labelled seme, while Peirce had selected the term seme for a special, quite different purpose. It suffices to confront Peirce's use of the term symbol with the various meanings of symbolism to perceive the danger of annoying ambiguities; but the lack of a better substitute compels us for the time being to preserve the term introduced by Peirce.

Following this long quote, it is important to stress that Jakobson did not leave these three sign types hanging as distinct, mechanical entities. A few pages later (1965: 26) he insists on "Peirce's concern with different ranks of coassistance of the three functions in all three types of signs" whereby the iconic, indexical and symbolic aspects of signs are blended in one another. Yet, his main concern is with the symbol (1965: 36-37) and, in the focus of the essay "Quest for the essence of language", there is no mention of 10, 66 or 59,049 sign types.

In light of this omission and in light of Jakobson's influence, it should not be too surprising to find that the icon-index-symbol trichotomy became standard fare in speaking of

semiotics in the kind of second-string fashion (i.e. with semiotics as a fashionable "approach" to supplement the main concern of established disciplines) common in the 1970s and 1980s. This was compounded by the fact that the dominant tradition in semiotics seemed to be Saussurean semiology, concerned exclusively with language, cultural artefacts and resolutely glottocentric in bearing. As such, Peircean semiotics was merely an adjunct to semiology insofar as it was able to contribute to or complement any semiological principles that had already been learned. The situation was exacerbated, of course, by the fact that Peirce's writings were so dispersed, so numerous, so difficult and, even in the *Collected Papers*, arranged in a way that was not conducive to understanding the development of his semiotics or to fathoming in general.

It is for this reason that the shadow of Jakobson, a supreme communicator, lurks behind many a subsequent account of Peircean semiotics up until well after his death in 1982. One of the earliest English examples of such a bias appears in Peter Wollen's *Signs and Meaning in the Cinema* (1969), a volume whose influence is evident in its appearance, most recently, in a 5th edition. The presentation of Peirce is markedly Jakobsonian; indeed, for Winston and Tsang (2009: 459), "the Peirce he [Wollen] brought into play was a rather limited and formalist thinker". Wollen is sufficiently circumspect to mention the blending proclivity of icon/index/symbol; yet there is no mention of other kinds of signs. Furthermore, the discussion of semiotics is in the context of Saussure and semiology (the word used by Wollen throughout, particularly in Chapter 3). So, an icon is a sign where "the relationship between signifier and signified is not arbitrary but is one of resemblances or likeness" (1969: 102); an index features an "existential bond" between itself and an object; and "The third category of sign, the symbol, corresponds to Saussure's arbitrary sign" (1969: 103). All of

which indicate for Wollen that "Peirce's categories [not Firstness, Secondness, Thirdness, but this trichotomy of signs] are the foundation for any advance in semiology [sic]" (1969: 103).

A one-off inflection of the Jakobsonian perspective on Peirce's second trichotomy is no doubt tolerable. However, one example leads to another. In the same UK tradition that spawned Wollen's book, Hawkes takes up the Jakobsonian baton. He begins by noting Jakobson's *signans/signatum* coining and states that it "does not essentially differ from the distinction between signifier and signified recorded by Saussure" (1977: 102) and then proceeds to insist that Peirce "proposed a complex classification of signs precisely in terms of the different relationship each manifested between *signans* and *signatum*" (1977: 102). Hawkes does, at least, mention that Peirce identified nine signs that can be combined to make ten types, as in CP 2.264; but this is just an *hors d'oeuvre* prior to announcing that, 'According to Peirce, the framework for the existence of knowledge derives from the assertion of propositions through the second "triad" of signs: icon, index and symbol' whose importance requires a closer look (1977: 104-5).

Five years later, in Fiske's *Introduction to Communication Studies* (1982), which is still in print, in a third edition featuring extra editorial paraphernalia, Peirce's second trichotomy appeared in further isolation: "Peirce produced three categories of sign, each of which showed a different relationship between the sign and its object, or that to which it refers" (Fiske 1982: 46). He adds: "What Saussure terms iconic and arbitrary relations between signifier and signified correspond precisely to Peirce's icons and symbols (1982: 46). Fiske (1982: 48), like Hawkes (1977: 106), then goes on to show how iconicity, indexicality and symbolicity can blend in the example of a traffic sign. In a book published at the same time and used on the same undergraduate courses as the volume by Fiske,

"Indexical, iconic and symbolic signs" get their own section in a chapter on "Semiotics and ideology" (Dyer 1982). There is absolutely no mention of Peirce; iconic, indexical and symbolic signs are simply discussed in terms of how they enact relations between "signifier and signified" (Dyer 1982: 99). Typically, in the writing of this time and this type on semiotics, there is a complete acceptance of "signifier" and "signified" as the accepted wisdom and no sense given that they are problematic both as concepts and translations (see Cobley 2006a).

More examples could be added to the roll-call of the quasi-Jakobsonian version of Peircean semiotics. The point, though, is not to chide this current for its deficiencies of scholarly virtue. Semiotics, for these writers, was just a matter of "theory" or "approach" – a means to write about the main concern: literature, media, culture, ideology and so forth. There is no sense in such discussions of semiotics that studying Peirce could lead to fundamental insights into modes of cognition, forms of reasoning and the human's place in the cosmos. Instead, there is more of a concern with how communication might involve recurrent codes or tropes that are, to a greater or lesser extent, obfuscatory, preventing humans from escaping ideology and the polis and, certainly, preventing them from gaining access to "reality". The thought, in respect to Peirce, of one of the foremost semioticians is merely illustrative in this context.

Grappling with the invariant

In the Introduction to one of the landmark treatises in semiotics, Umberto Eco (1976: 16) announces that the fourth chapter of the book 'will be devoted to a discussion of the very notion of the''typology of signs": starting from Peirce's trichotomy (symbols, indices and

icons), I shall show to what degree these categories cover both a more segmentable field of sign-functions and an articulated range of "'sign producing" operations, giving rise to a more comprehensive *n*-chotomy of various modes of sign production'.

In some ways, Eco was the scholar that Peirce's works had been waiting for. He was a medievalist, steeped in the scholastic tradition to which Peirce was one of the main heirs. Eco was also a scholar committed to sign theory: semiotics was at the core of all his work on popular culture, in journalism, in his fiction and in his cultural activities. *A Theory of Semiotics* was self-consciously a treatise on the current state of knowledge regarding how signification works. As such, it was a successor, or even superseded, *The Meaning of Meaning* (Ogden and Richards 1923) and *Foundations of the Theory of Signs* (Morris 1938). Eco invokes the latter immediately (1976: 16), then in passing later; the former is discussed in relation to triangles of signification on pp. 59-60. More central is Peirce, particularly the role of the interpretant, the second trichotomy, abduction and, running through the book's argumentation, the type/token distinction. *A Theory of Semiotics* evinces a profound engagement with the *Collected Papers*, including an appreciation of the "masterful little treatise on *Existential Graphs*" (1976: 197).

Notably, Eco furthers the Jakobsonian focus on icon/index/symbol, although he does not carry out this action in the kind of unknowing way that has been referenced above. His discussion of icon/index/symbol proceeds under the acknowledgment that it is "perhaps, the most popular of Peirce's trichotomy" (1976: 178). This is contextualized by the immediate discussion of qualisigns, sinsigns and legisigns (1976: 179). In the chapter devoted to "Theory of sign production", Eco notes (1976: 217) the "fallacy" of sign typology and refers to sign "functions", instead. He adds (1976: 303 n.19) the following note

To the extent that Peirce established part of his program of a typology of signs (only 10 types on the programmed 66) every sign appears as a bundle of different categories of signs. There is not an iconic sign as such, but at most an Iconic Sinsign which at the same time is a Rheme and a Qualisign, or an Iconic Rhematic Legisign (2.254). Nevertheless the classification was still possible for, according to Peirce, the different trichotomies characterized the signs from different points of view and signs were not only precise grammatical units but also phrases, entire texts, books. Thus the partial success of the Peircian endeavor (along with his almost complete failure) tells us that if one wants to draw a typology of signs one must, first of all, renounce the straightforward identification of a sign with a "grammatical" unit, therefore extending the definition of sign to every kind of sign-function.

This is a very telling passage. It represents a considerable leap in sophistication over the conceptualization of the trichotomy's blending propensity, which other commentators, often simplifying Peirce's semiotics, were trying to grasp. It also makes clear the distinction of the conceptualization of sign types and sign functions. It inculcates icon/index/symbol into the typology of ten signs; and, while so doing, it notes that Peirce used the singular "sign" only as a heuristic device in theoretical writing – frequently it is clear that Peirce was concerned with the singular sign, strictly, as a way to conceive a *collection* of signs.

The last point is an important one for Eco, but it takes *A Theory of Semiotics* in a very specific direction as far as the development of Peircean semiotics is concerned. Some of the key points of what a Peircean semiotics would be forty-two years later are definitely apparent in Eco's treatise. He is clear from the outset that 'the "subjects" of Peirce's "semiosis" are not

human subjects but rather three abstract semiotic entities, the dialectic between which is not affected by concrete communicative behaviour' (1976: 17). In this way, Eco shows how Peirce's theory avoids a psychologistic perspective on sign use. More generally, Eco interprets Peirce's semiotics as "non-anthropomorphic", acknowledging that this designation "could also fit Saussure's proposal; but Peirce's definition offers us something more. It does not demand, as part of a sign's definition, the qualities of being intentionally emitted and artificially produced" (1976: 15). Indeed, the third element of Peirce's sign guarantees the latitude in understanding signs beyond their mooring in communicational processes that Eco lauds. He writes (1976: 68; emphasis in the original), "*The interpretant is not the interpreter* (even if a confusion of this type occasionally arises in Peirce). The interpretant is that which guarantees the validity of the sign, even in the absence of the interpreter". What Eco is pointing out is that the idea of signs merely as instruments in full communication is woefully inadequate to any pursuit of semiotics after Peirce.

Yet, *A Theory of Semiotics* is very much a work that tries to fuse knowledge in semiotics with knowledge in communication theory (see Cobley 2013). In part, the fusion is negotiated through a courtship of Peirce's semiotics and the more invariant features of the sign in semiology after Saussure. As a whole, the book is devoted to the discussion of invariant signification and even has a long chapter on "Theory of codes". Peirce's sign is, at one stage, even discussed in terms of "overcoding" (1976: 133) and "undercoding" (1976: 135-6). As has been mentioned, Eco sometimes couches the notion of code in Peirce's terms of "type" and "token", a common approach to defining code (Ogden and Richards 1923: 280-1; Harris 1996: 10) which sadly overlooks Peirce's third term in that distinction, the "tone" (CP 5.437; Cobley 2017). Mainly, though, Eco (1976: 36-7) gives a strong definition of coding as composed of rules that can incorporate looser definitions of codes as general

practices, guidelines or fairly weak constraints on meaning. Peirce's conviction that the work of the interpretant gives rise to further signs seems somewhat at odds with Eco's emphasis on coding which, by definition, involves invariant meaning rather than interpretation. Of course, such a view of fully invariant coding is only really applicable to machines and less so to most human practice. So, in a synthesis of Saussurean and Peircean perspectives Eco stresses the way in which signs refer to other signs or "cultural units": "*Every attempt to establish what the referent of a sign is forces us to define the referent in terms of an abstract entity which moreover is only a cultural convention*" (1976: 66; emphasis in the original). Slightly side-stepping full invariance, while retaining the Peircean idea of "sign" as applicable strings of signs, the "meaning" of a term for Eco can only ever be a "cultural unit" (1976: 67) or, at most, a psychological one. Eco thus casts semiotics as a "substitute for cultural anthropology" (1976: 27), effectively underplaying all the opportunities that Peirce's semiotics offered, and which Eco had noted, for a more comprehensive, encompassing science of signs throughout all realms in the universe.

The inflection of Peirce in *A Theory of Semiotics*, as part of a general semiotic enterprise which featured Barthes, Saussure and Hjelmslev, as well as the notions of "expression", "content", "denotation", "connotation" and "referent", perhaps reflected an ambitious, but premature, attempt at holism. In the spirit of co-operation fostered by the formation of the IASS in 1969, in which Eco was involved, as well as the subsequent Congress of the IASS in Milan (1974), Eco (1979: v) had stated the aim "to discuss the state of the discipline but also 1) the right of the discipline to exist, 2) its history, and 3) the possibility of providing the discipline with a unified methodology and a unified objective". Yet, there were two further large theoretical and historical reasons for the Peirce of Eco to appear in the way he did in the 1970s. The first of these stems from Eco's ongoing concern

with the practice of interpretation. Witnessing the excesses of deconstruction and poststructuralism, particularly their sometimes relativist, Humpty Dumpty approach to text interpretation, Eco was alert to the need for credible interpretations of semiosis. He sought to rein in the unruliness that "unlimited semiosis" engendered by the interpretant might seem to warrant. In his 1990 essay on 'Unlimited semiosis and drift: pragmaticism vs. "pragmatism"' he stated his position with supreme force and clarity, showing that the growth of signs that Peirce had analysed so extensively, differed almost immeasurably from the "anything goes" overinterpretation of some contemporary textual exegeses. The second large historical and theoretical reason for Eco's "invariant" Peirce arises from an "incontinence" in general semiotics of the period. Towards the end of his life, Eco stated quite bluntly in an interview that he and his fellow semioticians in the 1960s and 1970s had "pissed code" (Kull and Velmezova 2016). That is, they were unable to restrain their euphoric dream of codifying all phenomena, making the subject to invariant readings.

Nonetheless, Eco's Peircean semiotics should not be consigned to a historical conjuncture. The issue of interpretation in a Peircean frame was not to be curtailed. Furthermore, the reach of Peirce's sign beyond human communication and the a-personalism of the interpretant, both of which exercised Eco in 1975-6, were to be enduring matters in Peircean semiotics.

'Semeiotic" and the "sop to cerberus" meet pragmaticism

Two contemporary indications that these were enduring matters are offered in quite different overviews of Peirce's work that are very much germane to the development of semiotics. The first is associated with Max Fisch; the second with Joseph Ransdell – both of whom were among the foremost Peirce scholars of their time. Fisch's article, from 1978,

consisted of a survey of the fortunes of Peirce's semiotics in a fashion that has partly provided the model for the current essay. It mentions first what Fisch considers to be the key terms of Peirce's semiotics, the Latin derivatives, "*representation*, *sign*, *object*, and *interpretant*", "semiosis" and, less familiar, "semiosy" ([1978] 1986: 321). Indeed, Fisch articulated and promoted, in this essay and elsewhere, the argument that Peirce's preferred name for his sign theory was "semeiotic", an argument that John Deely (2006: 74-75) later put to the test and found wanting.

For Fisch, although Peirce was a logician, it was important to note that his semiotics was first sketched on 14 May 1867 in "On a new list of categories'. There, three kinds of representations – likenesses (later: icons), indices, and symbols - mapped onto a trivium of conceivable sciences – formal grammar, logic, and formal rhetoric in respect to a general division of symbols, common to all three sciences – terms, propositions and arguments and three kinds of argument associated with the representations: hypothesis (likenesses), induction (index), deduction (symbol) ([1978] 1986: 324). This framework, reports Fisch ([1978] 1986: 326), arose from lectures which Peirce was invited to give at Harvard in 1865 and later, in 1866, at the Lowell Institute, expressly on the "logic of science'. So, while Fisch sees Peirce's study of logic and mathematics as paramount, he nevertheless insists that it takes place within the general theory of signs ([1978] 1986: 337). Indeed, Fisch goes all the way back to "Some consequences of four incapacities", published in the *Journal of Speculative Philosophy* in 1868, to exemplify Peirce's contention from an early stage (5.253) that "all thought is in signs" ([1978] 1986: 325).

In discussing Peirce's later definition of signs, Fisch refers to the 23 Dec 1908 letter to Lady Welby. Famously, Peirce writes:

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 (SS: 80-1).

Fisch asks ([1978] 1986: 343) "What, then, was the sop to Cerberus?" The answer that he gives implies that Peirce uses "upon a person" as a figure of speech; but, in doing so, really did not wish to lapse into psychological discourse or psychologism. This is no doubt true in some measure: Peirce's semiotics repeatedly veers away from explanations based on the psychology of people and its whole *raison d'être* is "logic as semiotic" rather than "psychology as semiotic'. What Fisch misses here, more so than Eco, is the opportunity to identify the mention of the sop as an indication that Peirce, rather, did not wish to lapse into a general anthropocentrism. The consequences of this point for Peirce's semiotics will be revisited, below.

Meanwhile, Ransdell's overview of Peirce was published just one year before that of Fisch. It differs from the later of the two essays in that Ransdell is much less reticent about foregrounding semiotics in Peirce's career. He sees Peirce's project as an attempt to bring "communication, meaning and inference "into a genuine theoretical unity" ([1977] 1997: 157) – an aspiration not dissimilar from that of Eco (1976). Making his position clear from the outset, Ransdell says of Peirce "a good ninety percent (if not more) of his prodigious philosophical output is directly concerned with semiotic" ([1977] 1997: 158). What goes with this, for Ransdell – and it is certainly where he concurs with Fisch – is the requirement of

approaching Peirce's semiotics by understanding "something of the philosophical ideas at its basis" ([1977] 1997: 159). At a moment when students in subjects amenable to semiotics were being taught that Peirce provided a supplement to Saussure in his icon/index/symbol trichotomy, Ransdell's intervention was timely, even if its consequences were demanding.

Most importantly, Ransdell anticipated in the 1970s where Peirce would lead in semiotics nearly fifty years later. In particular, Ransdell ([1977] 1997: 160) emphasized Peirce's philosophy of mind:

> Prima facie it may sound absurd to suppose that a conception of mind derived from an analysis of human truth-seeking will have fruitful application to such sub-human entities as, let us say, amoebas or slime molds, or to such global processes as evolution. That it should have at least some application to human behavior and to the products of human art is reasonable enough in view of the fact that it was originally derived from a conception of a human activity. And of course it is not difficult to see how such a conception might have application to artificial intelligences, since they are usually constructed on an anthropomorphic basis to begin with. But the far wider application indicated may initially seem dubious indeed. In fact, it is not so implausible as it may at first seem, in view of the way Peirce construes truth.

Ransdell notes that, thus far, Peirce's work has been insufficiently developed and predicts greater areas of application for his semiotics as "mind" is replaced by "semiosis" and "thought" by "sign", "interpretant", "symbol" and so on, all of which avoid what Ransdell calls "mentalism" ([1977] 1997: 161).

Ransdell's observations on the symbol bear revisiting in light of what contemporaries were assuming in regard to its correspondence with the Saussurean linguistic sign. He points out that it is often forgotten that linguistic signs will partake of indexical and iconic functions (the typical "blending" in the trichotomy); he also argues that the "conventionality" which is their putatively dominant characteristic is by no means straightforward. Indeed, the term "conventionality" is quite obscure because there is little agreement about how it is constituted. The issue is certainly not pursued by Peirce. Symbols, for him, are not limited to conventional signs; rather, they depend on a habit or natural disposition (Ransdell [1977] 1997: 174). Furthermore, this is not a matter of an opposition between "nature" and "convention", as some semioticians would have it. Such an opposition constitutes the crux of early Barthesian semiology, for example, where societal "mythologies" consist of conventional signs masquerading as "natural" ones (Cobley 2015). Yet, as Ransdell points out, there are natural symbols as well as conventional ones. The symbol, more precisely, should be defined as deriving "no value as a sign from anything but the fact that it will be interpreted in a certain regular way" and "every given symbolic interpretation is, qua symbolic sign, hostage in its meaning to interpretation subsequent to it - a potentially infinite process which can only be conceptualized by means of a general rule" ([1977] 1997: 174-5). In this way, the symbol is a prime example of the future determining the past: that is, the interpretation accruing to a symbol depends to some extent on how that interpretation might change in the future.

The point that Ransdell makes in 1977 lays out the agenda for current "interpretative" (as opposed to "code") semiotics. He writes ([1977] 1997: 174-5),

Insofar as our thoughts are symbolic in character (as linguistic thoughts largely are), they are what they are because of what will be made of them. It is thus in the creative

reception of thought that its meaning lies. It is true that we cannot interpret a symbolic thought to mean just anything we want it to mean, but the reason for this does not lie where it is commonly thought to lie: in the signs themselves - as if words have intrinsic semantic limits quite apart from all understanding of them - or in a private Cartesian ego which invests them with meaning through an act of will. When we de-limit a thought - give it a definite semantic contour - by our interpretation of it, the limit upon us in doing this can only lie somehow in the fact that our interpretation is in its turn a thought which will get its semantic identity through some subsequent delimitation, and so on ad infinitum. The limits of symbolic meaning thus really lie in the *generosity* of future interpretation, and if we wish to maximize meaning we are obliged to be as generous in our interpretations as is feasible in view of the generosity which we can expect from our subsequent interpreters. It is really only the latter which limits us.

The "moral" that Ransdell takes from Peirce's theory of symbolic communication is that it is in human inclinations to critically cultivate the growth of meaning, dependant on the nurturing acts of fellow interpreters in the future, that humans themselves will grow. One could add two points to this observation. First, the growing of signs that Ransdell envisages, is consonant with what the Peirce of biosemiotics takes as axiomatic in the functioning of the human *Umwelt* (see "A matter of fact – natural signs and symbols", below). Second, the cultivation of symbols as a critical projection of future meaning cannot be an induction - a brute, indexical relation in the present. Nor can it immediately become an induction - a relation that *must* obtain in the future. Rather, interpretation must first be hypothetical: an "abduction" in Peirce's semiotic terminology.

Abduction and interpretation

Thomas A. Sebeok constantly kept Peirce on the agenda of semiotics. Even as a linguist steeped in the technicalities of language teaching and heavily influenced by Jakobson, as he was early in his career, Sebeok was also the student of Morris and therefore acquainted with Peirce from a tender age. Sebeok's championing of Peirce at all stages amounted to a seizing of the opportunity, missed by Eco, Fisch and so many others, to fulfil Peirce's vision of an encompassing science of signs throughout all realms in the universe. So, Peirce is represented fairly comprehensively in Sebeok's work from the late 1960s onwards, with Fisch ([1978] 1986: 346) pronouncing him "the most productive and influential semeiotician of the present day". Looking back from the vantage point of the present, it is clear that Peirce's role in Sebeok's *oeuvre* is certainly momentous, but only as part of a broad, ambitious and thoroughly eclectic semiotic project that matched, if not exceeded, Peirce's own. However, Sebeok was responsible for a bout of pivotal Peircean scholarship focusing on abduction. In two volumes - one on Peirce and Sherlock Holmes co-written with Umiker-Sebeok, "*You Know My Method*" (1980) and a volume co-edited with Eco, *The Sign of Three* (1983) – Sebeok completely re-draws the common understanding of what is involved in knowledge through observation.

Both books are concerned with "classical" detection in fiction and, in one case in particular, detection in real life. For the discussion of fiction, Sebeok shows that the logic of the archetypical detectives, Pierre-August Dupin (created by Edgar Allan Poe) and Sherlock Holmes (created by Arthur Conan Doyle), consists not in "deduction" as a working through of signs. Instead, it proceeds from "abduction" or, put another way, "retroduction", "hypothesis" and "conjecture" upon signs. The inferences of the classic detective are revealed

to be informed "guesses'. A fictional detective is usually presented with an event - a case - without knowing what precipitated it; the detective's task, then, is to not only divine the precipitating factor(s) that have brought about the current configuration of sign but also to solve the case by using the signs to apprehend the criminal. The approach of Dupin and Holmes to such cases appears to be *deductive*: it presents the solution that, following logical consideration of the signs, *must be* correct. After all, as Holmes says to Watson as early in his career as Chapter 6 of *The Sign of Four* "How often have I said to you that when you have eliminated the impossible, whatever remains, *however improbable*, must be the truth?" The Peircean approach to such matters is more nuanced and instructively so. In the essay, "Deduction, induction and hypothesis" which appeared in *Popular Science Monthly* in 1878 (also reprinted in Cohen's 1923 Peirce collection), Peirce (CP 2.623) summarises Aristotelian logic, using syllogisms to demonstrate different types of reasoning:

> Suppose I enter a room and there find a number of bags, containing different kinds of beans. On the table there is a handful of white beans; and, after some searching, I find one of the bags contains white beans only. I at once infer as a probability, or as a fair guess, that this handful was taken out of that bag. This sort of inference is called *making an hypothesis*. It is the inference of a *case* from a *rule* and *result*.

To this, Peirce (CP 2.625) adds that, hypothesis or abduction is a weak kind of argument which often inclines our judgment so slightly toward its conclusion that we cannot say that we believe the latter to be true; we only surmise that it may be so. But there is no difference except one of degree between such an inference and that by which we are led to believe that we remember the occurrences of yesterday from our feeling as if we did so.

So, abduction is altogether more tentative and risky than either induction or deduction. To demonstrate this point Sebeok and Umiker-Sebeok discuss a hitherto little-known autobiographical essay of Peirce on abduction. In "Guessing" (1929 [c. 1907]), Peirce relates an incident, and its subsequent investigation, in which his watch, chain and coat were stolen during a trip from Boston to New York on the Fall River Line steamship *Bristol*. When he discovered the crime, Peirce arranged for all the waiters on the ship to be lined in a row for his inspection. During the inspection he was visited with a sudden conviction that one of the men in particular was the culprit and, despite the subsequent assignment of a Pinkerton detective to the case and the pursuit of other suspects, Peirce was proved right in his suspicions. As Sebeok and Umiker-Sebeok show, Peirce's abduction was a pure guess, a response to a hunch. It seemed to come from nowhere and was probably derived unconsciously rather than the consciously. Yet, quoting Peirce, they note that the chief elements of such abduction are not only "its groundlessness [and] its ubiquity" but also its "trustworthiness" (1980: 23). Eco (1976: 132), too, notes that "abduction seems to be a free movement of the imagination, more endowed with emotion (more similar to a vague intuition) than a normal decoding act".

The puzzle of the combination of "wild" interpretation and "trustworthy" interpretation leads Sebeok and Umiker-Sebeok to resurrect the scholastic definition later utilised by Peirce. The latter had argued that there are broadly two modes of knowledge in use in detection: *logica utens* and *logica docens*. The first logic is broadly associated with the abductive impulse in that it is a logic-in-use on a quotidian basis; it has an awareness of the need for a logical system but is not an informed logic deriving from years of scientific thinking, experience and observation. Such an informed logic, on the other hand – common to physicians and other expert witnesses, including fictional detectives - is the second mode:

logica docens (CP 2.204; MS 692). Sebeok and Umiker-Sebeok note that Watson in the Holmes canon enacts *logica docens* in respect of his medical practice but is inept in transferring this method to the detection of crime; Holmes, on the other hand, practices the *methods* of medicine *in general*, thus ensuring that "an element of art and magic is blended into the logic of scientific discovery" (Sebeok and Umiker-Sebeok 1980: 66). As Ransdell ([1977] 1997: 165) notes, *logica docens* entails a logic which is teachable and that Peirce believed should be humans" "universal logic-in-use" as opposed to the more "instinctive" logic-in-use of *logica utens*. The latter, Ransdell continues, works in primitive and simple life; but it needs theoretical development in the more complicated lives of contemporary humans. "But", he adds ([1977] 1997: 165),

> this theoretically developed logic - the result of the logician's and scientist's work - is or should be rooted firmly in the instinctive logic-in-use. In other words, the logician does not - or rather should not - be attempting to invent a general method for the pursuit of truth but should instead be discovering and developing that method which he and everyone else already uses, and which human beings always have used and indeed always will use, even if theoretical logic and science should cease to exist.

Throughout his work, Sebeok makes reference to the signs that medics have been able to detect through symptoms on the patient's body as well as nonverbal and verbal references to such symptoms from the patient to the doctor. Sebeok and Danesi (2000: 7) note that the appearance of the inside of an atom was initially "abducted" by Ernest Rutherford a long time before it could be verified. These are examples of what might be called "extrapolating" from signs – with some success. However, as has been noted, Eco (1976: 133-137) considers abduction as a component of interpretation to be prone to "overcoding", "undercoding" and

requiring "discoursive [sic] competence". What this demonstrates is that, while abduction will always be a way of thinking about signs and is unexpectedly integral to logic, it nevertheless requires circumspection. Peirce put the matter considerably more bluntly: "no blight can so surely arrest all intellectual growth as the blight of cocksureness; and ninety-nine out of every hundred good heads are reduced to impotence by that malady - of whose inroads they are most strangely unaware!" (CP1.13, c. 1897) This circumspection is what is known as the doctrine of fallibilism and it bears directly on the action and interpretation of signs. Before examining fallibilism in Peircean semiotics, though, it is necessary to gain some clarity about what signs are taken to be doing.

What do signs do?

Customarily, it is assumed that signs do something. This is inherent even in those cases when signs fail to do something. In Peirce's semiotics, what a sign does is to "stand for" something (CP 1.339, 1.538, 2.228, 2.274, 2.305, 2.436, 2.683 etc. throughout the *Collected Papers*). Similarly, although it is not a term commonly used by semioticians, Winfried Nöth (2011: 446), notes that "representation" is what a sign could be seen to carry out; it is a key concept that occurs 780 times in the *Collected Papers*. Sign, he notes as a contrast, does not appear in the sense of semiotics, during the period of 1857 to 1866. Then, in 1867 Peirce continued to use the term "representation" as the genus within which signs are one species. Thus, as Nöth points out (2011: 447), semiotics in the 1860s is, for Peirce, the general science of representation(s). Of course, representation – as a term and as an act – has a great many definitions and a great many applications in the study of human signification, particularly in studies of culture. Yet, Nöth identifies some very convincing reasons regarding why it is important in Peircean semiotics. As has been seen, commentators on

Peirce - within semiotics and sometimes as transient fellow travellers of semiotics - have fixated on the icon/index/symbol trichotomy. Undoubtedly, this is the clearest example of a familiar sign-to-object representation (crudely: resemblance/causality/conventionality). That is, a dyad. As Nöth (2011: 451) demonstrates,

> Peirce, however, from his earliest writings onwards, used the expression representative exclusively in a triadic sense. Even in its syntactic construction, his use of the adjective is trivalent. He says, for example: "By a name is usually meant something representative of an object to a mind" (CP 3.319, 1882). In 1868, he states that "the representative function of a sign [. . .] is something which the sign is, not in itself or in a real relation to its object, but which it is to a thought" (W 2: 225; CP 5.287). In the same manuscript, he distinguishes this triadic function from the denotative application of the sign. Only in this latter sense is the sign prescinded from its interpretant, since in its "the pure denotative application" the sign is restricted to its "real connection" with its object (W 2:227; CP 5.290).

What is missing, of course, in denotative and connotative dyads, is the interpretant. For Nöth (2011: 452), this point also rather gives the lie to the idea, common in some quarters, that Peirce's concept of representation pertains to the dimension of reference, whereas his concept of signification pertains to the dimension of meaning.

Yet, it is not just the interpretant that has been the crux argument in Peirce's semiotics. The representamen, as a term, has also been the focus of considerable debate which Nöth cites. It is well known that Peirce "abandoned" the term in July 1905, according to an unsent letter, included by Hardwick as an appendix in his volume of the Peirce-Welby

correspondence, in which Peirce reverts to "sign" not "representamen", having "no need of this horrid long word" (SS: 193). Nöth, however, finds the definition of representamen in 1902 to be crucial. He argues (2011: 463) that Peirce's distinction of representamen and sign that developed in 1902 restricted the concept of "sign" to representamens with mental interpretants while extending the concept of representamen to representations not interpreted by thoughts. By 1995, with his unsent letter to Lady Welby, the distinction was less necessary. Nöth (2011: 464) writes:

> With his extension of the concept of representamen in 1902 to processes in the absence of human minds, Peirce could now affirm what he had merely hypothesized in 1873, namely that the faculty for biological self-reproduction makes a sunflower a representamen.

Nöth then quotes CP 2.274, where Peirce suggests that the turning of the sunflower towards the sun, with its possibility of reproducing a sunflower, entails that "the sunflower would become a Representamen of the sun". The conclusion of Nöth's article, even without sops to Cerberus, should be clear: in the very fabric of Peirce's sign theory is a conception which not only allows, but invites an understanding of the sign which applies to terrestrial flora as well as fauna.

This, then, is what signs do in Peircean semiotics: they pertain to all life forms. Yet, there are also suggestions that signs are not just applicable to life as it blithely proceeds in a Newtonian universe. One of the most ambitious Peircean semioticians, Floyd Merrell, has been concerned to extend the triadicity of Peirce's logic to account for nothingness at one end (if semiosis was linear – which it is not) and infinity at the other. Merrell's work consists of

impressive interdisciplinarity coupled with a compulsion to communicate. It results in writing

on Peirce that is both folksy and very approachable in tone, but also forbidding in its range.

Perhaps disappointingly, Merrell (2001: 31) repeats the second trichotomy fallacy, qualified

by noting that icon/index/symbol make up the "most basic classes of signs in Peirce's

menagerie". Happily, he does add elsewhere (2000: 37) that

> [I]f we really want to get a fairly good grip on Peirce's semiotics, in addition to icons,
> indices and symbols, we must at the very least take in what he calls *qualisigns*,
> *sinsigns* and *legisigns*, and *terms* (or *words*), *propositions* (or *sentences*) and
> *arguments* (or *texts* or *narratives*)" (2000: 37)

Merrell is not afraid to add terminology, as he does here. For him, the *growth* of signs,

through the action of the interpretant and the process of unlimited semiosis (this term from

Eco 1976: 68, rather than Peirce) is a preoccupation of Merrell's semiotics. So he takes

Peirce's ten signs, renumbers them and renames some of them as follows:

(1)   Qualisign

(2)   Iconic sinsign

(3)   Indexical sinsign

(4)   Dicent sinsign

(5)   Iconic legisign

(6)   Rhematic indexical legisign

(7)   Dicent indexical legisign

(8)   Term or word [rheme]

(9)   Proposition [dicisign, dicent]

(10)   Argument or text or narrative [argument]

As part of the process of listing these signs, Merrell also gives one of the few accounts of them which can be used by students who are searching for applications of Peircean sign types. The account cannot be re-played here, but those looking to explain to an audience outside the Charles S. Peirce Society why the "decalogue" should be studied are certainly advised to consult it directly.

Yet, while Merrell is adept at communicating Peirce's sign theory, his larger concern is to extend semiotics to domains of greater complexity than general representation. In introducing the ten signs, he notes how there is a movement (as implicit in Table 2.1, above), from the top left-hand corner with *qualisign*, down to the bottom right-hand corner with *argument*. This, he points out (2000: 38), "does not imply a one way path from simple signs to complex signs. Rather, the path is two-way". It is the reason he seeks to extend the triad of Peirce, such that 1,2,3 can be shown to arise from 0 (nothingness) and lead to ∞ (infinity). It takes little imagination to discern that the Peircean sign is thus being elevated to a cosmological principle. Merrell (1997: 66) opines that

Peirce, a child of the nineteenth century, endowed the mind with free-wheeling evolutionary principles contingent upon his triadic dialogic spiral, beginning with "chance" and ending in "necessity." But unlike Kant, he took a step toward liberating classical mechanics from its conceptual straitjacket, though he did not take the final

step into the light of day subsequently made possible by relativity, quantum theory,

the "limitative theorems" of Godel and others, and avant-garde movements in the arts.

For all the cosmic significance he finds in the Peircean sign, Merrell is still able to ground it

in something familiar. He writes (2000: 54) of 0, 1, 2, 3 . . . ∞,

Just five fleshless signs and a few commas and periods. Yet it's everything. It's

nothing and it's everything, depending on what you bring to the equation. That

venerable Newtonian equation, "F = M x A", "Force equals Mass times

Acceleration", is nothing but a few signs as well. However, if in a baseball game the

ball ricochets off a bat and comes flying in the direction of your forehead, you know

you'd better do something about. So you raise your gloved left hand and neatly catch

the fly. You didn't think in proper Newtonian terms. "The object of x grammes is

travelling with y velocity which yields z momentum and will collide with a human

skull with q force unless it is met with an equal and opposite force in the form of

object p'. You had not time to think it. You just acted. Your body acted on the sign

while your sluggish mind was dragging along behind. Your body took all the

information in, and did what it had to do. In other words, the ball came out of

nowhere, "0", your body instinctively grasped the sign, "1, 2, 3, . . ." and it performed

the necessary act before you were knocked into oblivion, "∞'. Well, not really "0" and

not "∞", but you know what I mean. You know what I mean in the same way that you

can get up and walk to the wall in spite of Xeno's argument that in order to do so you

must transgress an infinity of spatial increments through an infinity of temporal

increments. You just know what to do and how to do it and you do it.

Of course, there are moments when "You just know what to do and how to do it and you do it". That is typical of abductive processes and the common practices of *logica utens.* Yet, as mentioned earlier, this is no license, granted by Peircean semiotics, to be cocksure.

Fallibilism: the vagueness and approximate nature of signs

One of Peirce's most well-known essays outside semiotics is "How to make our ideas clear", published in *Popular Science Monthly* in January 1878, and available in the *Collected Papers* at 5.388 to 5.410. Here, Peirce criticises the contention from logic that ideas are either clear and unmistakable or otherwise obscure. As a whole, though, Peirce finds, ideas can be very clear without necessarily being true. This is a matter which drives his concern, especially after 1878, with what he calls in the first chapter title of the *Speculative Grammar*, the "ethics of terminology" (CP 2.219-26). The same concern is evident, of course, in Peirce's changing of his original designations for sign types and functions as well as his use of Greek or Latin derivatives and neologisms. He writes (CP 2.223, 1903):

> It is good economy for philosophy to provide itself with a vocabulary so outlandish that loose thinkers shall not be tempted to borrow its words. Kant's adjectives "objective" and "subjective" proved not to be barbarous enough, by half, long to retain their usefulness in philosophy, even if there had been no other objection to them. The first rule of good taste in writing is to use words whose meanings will not be misunderstood; and if a reader does not know the meaning of the words, it is infinitely better that he should know he does not know it.

He was certainly right about Kant. The distortive common sense of the objective/subjective couplet has been so enduring that Heidegger (1978 [1946, 1947]) called for it to be completely deconstructed and it remains to be seen whether Deely's accomplishment of that (1994, 2009a; Cobley and Stjernfelt 2016) will catch on more widely. For Peirce, however, the challenge of terminology is the challenge of signs as a whole – what interpretants do they produce and how is it possible to be confident that those interpretants lead in the direction of reality?

Susan Petrilli, a major Peircean semiotician and formidable scholar of Welby *inter alia* (see, for example, Petrilli 2009), emphasizes the necessary vagueness of signs in Peirce's semiotics. There is, in the interpretant, a fundamental lack of certainty. Whereas a sign conceived as a "code" in the strong sense will act mechanically and with certainty, interpretation involves variability at its core because a sign is *for* some entity (or, as in the "sop to Cerberus" mentioned earlier, it has "an effect upon a person"). So, Petrilli notes (2015: 74) the division of the interpretant in which there is the "immediate interpretant", concerning meaning as it is ordinarily and customarily used by the interpreter and the "dynamical interpretant", concerned with meaning in a given context (the "effect upon a person"). Peirce's "final interpretant" indicates "interpretive potential at the highest degrees of significance and understanding" (2015: 74). It is worth noting de Tienne's point (quoted in Deely 2006: 116 n. 75) that Peirce does not mean the traditional sense of "final" when he uses the word "final" in "final interpretant" or "final causation"; rather, he means "ideal': "'Final'" says de Tienne, "is not confined to the purposive, but to the tendential".

Petrilli shows that Peirce and Welby's preoccupation with signs - and their discussion of them in the first decade of the twentieth century - is often focused on the scientific

adequacy of terminology. Evoking the spirit of *logic utens*, she states (2015: 94) that they both believed that such terminology should proceed from "a critical reading of common experience, common sense, and common speech" but nonetheless involve "a scientifically valid nomenclature, which breaks with individual habits and preferences and satisfies the requisite of unanimity among specialists". This includes an outlandish vocabulary. Yet, a *critical* common sense differs from perhaps one of the defining features of common sense: that is, the latter acts as a source of certainty in an uncertain world. Criticality throws into question this certainty, even while it does not obliterate common sense. Petrilli (2015: 98) considers Chapter 3 of Peirce's unpublished *A Survey of Pragmaticism* (1907, CP 5.505 to 5.525) on critical common sensism and notes that

> Peirce maintains that all beliefs are vague. He even goes so far as to claim that the more they are indubitable, the vaguer they are. He goes on to discuss the misunderstood importance of vagueness, even in mathematical thought. Vagueness is no less than constitutive of belief, inherent to it and to the propositions that express it. It is the "antithetical analogue of generality'.

She then quotes the following passage from CP 5.505:

> A sign is objectively general, in so far as, leaving its effective interpretation indeterminate, it surrenders to the interpreter the right of completing the determination for himself. "Man is mortal." "What man?" "Any man you like." A sign is objectively vague, in so far as, leaving its interpretation more or less indeterminate, it reserves for some other possible sign or experience the function of completing the determination. "This month," says the almanac-oracle, "a great event is to happen." "What event?"

"Oh, we shall see. The almanac doesn't tell that." The general might be defined as that to which the principle of excluded middle does not apply. A triangle in general is not isosceles nor equilateral; nor is a triangle in general scalene. The vague might be defined as that to which the principle of contradiction does not apply. For it is false neither that an animal (in a vague sense) is male, nor that an animal is female.

For Peirce, generality and vagueness are two different, even opposed, phenomena despite seeming to be synonymous in common sense terms. This opposition is particularly true of signs. A general sign will always have the same interpretant; a vague sign, in its very principle, will not have a fixed interpretant. Indeed, "no sign can ever be absolutely and completely indeterminate" (CP 5.506). This is a fact that semiotics has known for a long time, independently of Peirce. However, while its consequences for communication have been dwelt upon at length, the ramifications for cognition, knowing and science have received less attention.

For Petrilli, a proponent of critical dialogism, vagueness in the sign offers an opportunity for humans. She writes (2015: 100), "The risk is that the more we attempt to be precise, the less we understand each other". In the face of this, there is a need for recognition that explication of indeterminate semiosis is interpretative and "translative"; it leads to new interpretants and requires further approximation by those compelled by critical dialogue. The referent – a concept that has, in some ways, haunted general semiotics but which Peirce negotiated adeptly in his "object" and in his "realism" (see, especially, c. 1896, CP1.15 to 1.172; Deely 2001a: 161-486, 611-668) – seems to promise certainty. Only an approximation of certainty can be the target, though, of interpretants and interlocutors trading and translating them. As Peirce states, "there is a world of difference between fallible knowledge and no

knowledge" (CP 1.37); the former harbours the possibility of leading to a "final" destination while certainty gives the impression that such a destination has already been reached. Certainty seems to be the preserve of the individual, while community – a recurring word in the *Collected Papers* – is associated with the work required by uncertainty.

The crowd of interlocutors

Although he does not seem to have used the phrase, Peirce has become inexorably associated with the concept of a "community of inquirers", that body people in dialogue whose effort in the growth of signs will culminate in the arrival at a "final" scientific terminus. He outlines the idea in his 1869 paper, "Grounds of validity of the laws of logic: further consequences of four incapacities" in the *Journal of Speculative Philosophy* (Volume 2, pages 193-208; W2: 242-272). Taking the statement, "There is smoke; there is never smoke without fire: hence, there has been fire" he shows (W2: 252-3) how deduction can move from "relatively future" to "relatively past":

> Nevertheless, if we can thus reason against the stream of time, it is because there really are such facts as that "If there is smoke, there has been fire," in which the following event is the antecedent. Indeed, if we consider the manner in which such a proposition became known to us, we shall find that what it really means is that "If we find smoke, we *shall* find evidence on the whole that there has been fire"; and this, if reality consists in the agreement that the whole community would eventually come to, is the very same thing as to say that there really has been fire. In short, the whole present difficulty is resolved instantly by this theory of reality, because it makes all reality something which is constituted by an event indefinitely future.

In addition to indicating the future-orientation of the community's work, this quote also stresses the *vis a prospecto* bearing of semiosis as a whole (see also Deely 2014, 2015).

In light of the importance of the community in Peirce's semiotics and in light of the earlier question, "What do signs do?", perhaps it is time to ask what motivates semioticians of a Peircean bent. In 2007, the dedicated Peirce scholar, T. L. Short, published a book called *Peirce's Theory of Signs*. On the very first page (2007: ix), after the front matter, the book's preface began:

> Peirce's theory of signs, or semeiotic, misunderstood by so many, has gotten in amongst the wrong crowd. It has been taken up by an interdisciplinary army of "semioticians" whose views and aims are antithetical to Peirce's own, and meanwhile it has been shunned by those philosophers who are working in Peirce's own spirit on the very problems to which his semeiotic was addressed.

The book then goes on to consider Peirce's "mature theory" or "mature semeiotic". In reviewing the differences between semiology and what he calls "semeiotic", the book (2007: 16-21) gives a reasonable account, noting some of the problems that have been mentioned in the present essay, such as those inherent in attempts to reconcile Saussurean and Peircean semiotics as well as the dominance of "convention" in the functioning of signs. Yet, with that particular opening lunge, the book was to bound to be put to the sword itself, as it was by two Peircean semioticians: Joseph Ransdell and, especially, John Deely.

Spats of the kind that Short's book provoked take place fairly regularly in some academic circles. Yet, there is something to learn from this one with regard to what semioticians seek to do with semiotics - specifically, here, with Peircean semiotics. Deely - a semiotician with a formidable record in Peirce studies, the editor and prime mover of the electronic edition of the *Collected Papers*, an exegete of Peirce to match Short and, certainly, like Peirce himself, an original thinker who is also one of the heirs of the scholastic tradition (see, especially, Deely 2001a) – sets out to demolish the book on three main issues and some sub-issues. First, the "mature semeiotic" of Peirce is not Peirce's own. The book, according to Deely (2006: 59; see "References", below, for date discrepancy), presents "what Short thinks Peirce would have made his final theory if, in foresight, Peirce had known everything that Short knows in hindsight". "Peirce's mature theory" is code for "Short's theory of what Peirce should have thought". Second, the "mature semeiotic" that Peirce did not, in fact, develop is posited as separate from earlier stages of Peirce's development as a thinker. "Peirce's 1868–9 doctrine of thought-signs" (Short 2007: 27) is said to have been deeply flawed and said to have been recognized by Peirce who corrected himself by 1907. Ransdell (2007: 658), as might have been expected, was flabbergasted by this aspect of Short's book, calling it "pure fiction". Third, the conclusion about Peirce's "mature semeiotic" that the book reaches is a deliberate attempt to wrest Peirce from semiotics, the disciplinary field he founded, and claim him for Analytic Philosophy. There is certainly some pathos in vilifying a marginalised group (the semioticians) from the position of a powerful group (Analytic Philosophy) because the former possess something that the latter cannot bear them to have. As Deely (2006: 110 n. 48) puts it, "the emergence of Peirce as an important figure has been in spite of the Analytic mainstream development; and the scramble now to assimilate him to that tradition borders on pathetic".

Most of the criticisms of the book are provoked by this attempt to assimilate Peirce. The choice of one piece of terminology, for example, is decisive. Short's book uses "semeiotic" to distinguish Peirce's sign theory from the semiotics that Short associates with Europe, even though semiotics is a global enterprise with strong centres in Latin America and East Asia. So, Deely immediately sets to work on that ethic of terminology, concluding from his investigations (2006: 62-5) that "an actual examination of Peirce's own usage . . . rather clearly reveals a prevalence of semiotic over "semeiotic, with strong suggestions that even "semeiotics" is preferable to "semeiotic" (2006: 64). Fisch was responsible for creating the myth that Peirce preferred "semeiotic'; but, where that claim for the preference was innocuous, Deely writes (2006: 64), Short extends it in order to "cut Peirce off from those very "future explorers" who take up the doctrine of signs centered on semeiosis as Peirce understood it to be". Of course, "the "community of inquirers" of which Peirce made so much and on which he rested all his optimism for the future of thought becomes simply "the wrong crowd'" (2006: 61-2).

Another issue arises with the action of signs – semiosis. As is evident even from a cursory reading of Peirce's semiotics, semiosis lives by the rule of three. Peirce roots out all thinking that is not triadic or reduces to just dyads. Deely's definition of semiosis (2006: 74) occurs in precisely the same spirit: there can be brute physical action between two subjects; but if that action takes on significance, the character of signs, it involves "a coöperation 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" (cf. Peirce 1907; R318). Short's book, by contrast, is shown to harbour not a triadic sign but a quadratic one, because semiosis is taken to be "a feature of the purposive behavior of animals when they make use of signs" (2006: 75). That is to say, there is the triadic sign *plus* the animal user, which is also the

sign's "context" (2006: 77). One might add that such a quadratic definition of signs, featuring purposively behaving animals, sails perilously close to the wind of psychologism. So, one reason for the book's attack on semioticians is that it considers "semiosis as irreducibly concerned with something more than and considerably different from the action of signs as such, whereas for Peirce (in contrast to Short) this action of signs itself is the object of semiotic inquiry" (2006: 78).

Where semiosis goes and what it does poses a problem for those who would enforce disciplinary boundaries. This is because semiosis is *not* a phenomenon perpetually under the control of purposive animal behaviour. Deely writes (2006: 82),

> However much the politics of academia may seek to make the frontiers of its disciplines hard and fast, however "territorial" semiotic animals may become in "protecting their turf", they are powerless to change the fact that semiosis crosses all frontiers, even as it is involved in establishing those frontiers in the first place.

Complementing this point, Deely (2006: 86-88) discusses the two senses in which signs exist: as individual, common sense signs that are circulated, and as the triadic relation "above" all such common signs, the relation that enables them to be signs. In a sense, Analytic Philosophy might be able to mobilise certain signs within boundaries; however, it can do nothing about the triadic relation that allows signs to occur in so many places. It is this relation that the semiotic animals – humans – can conceive and the other species cannot (Deely 2006: 88). Yet, the triadicity in semiosis as recognized by Peirce still ranges over all realms rather than just that of purposive animals. Peirce's point in distinguishing interpretant from interpreter was "to move beyond the narrow (not to mention quadratic) view of semiosis

that Short is trying to impose on the theory of signs. For what Short has said tells us that purpose is imported into semiosis from the outside" (Deely 2006: 95). The distinction exists to allow precisely the entire non-human edifice of semiosis into the definitions of signs. One might add that Peirce's "sop to Cerberus" is not just a momentary and voluntary lapse into psychologism; rather, it is a terminologically heuristic figuring of his more general conception of where semiosis works and reaches. Deely (2006: 90) refers to this as "Peirce's Grand Vision" – 'the very vision which Short would have us believe Peirce "in his mature thought" abandoned'.

If Short's volume had kept abreast of contemporary semiotics, particularly how Peirce's insights have been used in biosemiotics (see "A matter of fact – natural signs and symbols", below, and Chapter 3), it would have perhaps avoided resting on the notion that animals constitute the "lowest level of semiosis'. Furthermore, it would have had to consider, without falling into pan-semiotics, the myriad of places where semiosis occurs. Part of the project of claiming Peirce for Analytic Philosophy, then, is to cut out Peirce's Grand Vision of signs perfusing the universe. Peirce, in Short's formulation, would certainly not be an heir to the scholastic tradition, forging semiotics in a bid to discover the hinterland of illusion and reality. Nor would he be a latter-day explorer of what Sebeok (2001: 8) called an enduring pre-Socratic practice, traversing all disciplinary boundaries, as well as the earth and the heavens. Rather, Peirce's sign theory would confine itself to formal logic or endless analyses of figures of speech. It would be as narrow and specialized as possible, bound by a conception of language. His idea of semiosis would be restricted to "the sphere of "interpreters" in just that sense of conscious beings that Peirce distinguished "interpretant" from in order to make possible consideration of the fullest extent of the action of signs as

triadic in the universe which signs perfuse" (Deely 2006: 98). That would be the Peirce of psychologism.

A matter of fact – natural signs and symbols

One of the first points that Frederik Stjernfelt makes, skilfully and persuasively is that Peircean semiotics is a resolute anti-pychologism. *Natural Propositions* (Stjernfelt 2014) is an extraordinary volume, marked by eminently quoteable wisdom on nearly every page, much of it related to a profound engagement with Peirce (and other thinkers). Ostensibly, the book's concern is with Peirce's formulations on Dicisigns or propositions and contains much welcome tough talk (which should be heard by anyone intoxicated with an "anything goes" inclination towards interpretation) regarding the status of signs as facts. The foundation of the book's argument is that Peirce shares an anti-psychologism with Frege and Russell but that it is an anti-psychologism (certainly *pace* Short) that is "*without the linguistic turn*" (2014: 4) and is earlier and more ambitious than the anti-psychologism of the other two thinkers.

Anti-psychologism, writes Stjernfelt (2014: 13), is basic for semiotics. Semiotics refuses to take signs as reducible to psychological phenomena. In the example of Peirce's semiotics, this has been seen throughout the current essay. The problem with psychologism is that it tends towards relativism. Stjernfelt (2014: 13) offers a simple, but compelling, fictional example:

> If mathematical entities were really of a purely psychological nature, then truths about them should be attained by means of psychological investigations. The upshot of psychologism might thus be that a proper way of deciding the truth of the claim that 2+2 = 4 would be to make an empirical investigation of a large number of individual,

psychological assessments of that claim. So, if we amass data of, say, 100.000 individual records of calculating 2+2, we might find that a small but significant amount of persons take the result to be 3 - which would give us an average measure of around 3.999 as the result. This might now be celebrated as the most exact and scientific investigation yet of the troubling issue of 2+2 - far more precise than the traditional, metaphysical claims of the result being 4, which must now be left behind as merely the coarse and approximate result of centuries of dogmatic mathematicians indulging in armchair philosophy and folk theories, not caring to investigate psychological reality empirically.

Similarly, semiotics seeks not to reduce signs to individual mental representations: both the sign vehicle, its content and act of signification are considered by semiotics in their bearing as types whose tokens can be discerned in processes of cognition and communication. Stjernfelt (2014: 45) refers to current experimental research in semiotics, involving tests, eye tracking, brain imaging and so forth, research which produces results and adds to understanding of how groups of human beings deal with meaning and reference. He concludes, however, that "such results can never hope to reduce the generality of signs to any mere sum of such individual processings".

In sum (Stjernfelt 2014: 47),

Semiotics is impossible without anti-psychologism. If signs were only particular, fleeting and ever-shifting epiphenomena of brains and minds, this would not only give up signs as such as stable objects of scientific study - but it would, in turn, destroy even psychology itself along with all other sciences, because sciences, as already

Aristotle realized, always intend general structures, even when they describe particular objects.

This is a fitting first station for a book which, although bearing some traces of fragmentation attendant on being made up of previously published articles, adheres throughout to the discussion of the "reality" of signs, or signs" factual bearing. Just to be clear, this last does not, of course, entail that all signs - or even some – are straightforwardly referential. There would be no need for semiotics if that was true. Yet, signs" capacity or potential to "carry a truth value" (Stjernfelt 2014: 1) as propositions demands at the very least the extensive study which Stjernfelt devotes to them in this book. Possibly where this point about the "reality" of signs is most evident is in biosemiotics, the topic of Chapter 7 of the volume.

Already, it should have been clear from what has been shown so far in this essay that Peirce's semiotics, even as evidenced in relatively early commentaries on it, provides important grounds for present-day biosemiotics. For example, Ransdell in 1977 stresses the growth of signs – that is, semiosis in general. One sphere of semiosis, the pursuit of truth in human beings, he observes ([1977] 1997: 168) to be "generically the same as something to be found in life generally, namely, the tendency to learn". Yet he notes that humans cannot learn fully what is real. What access do we have to the real object, he asks ([1977] 1997: 168)

besides our access to the immediate object, that is, our understanding of it at a given time? Can we somehow get outside of our own minds, our own semiosis, to compare the real object to our idea of it to see to what extent the latter is a faithful and adequate representation of the former? Of course not. Consequently, either the real object is

forever unknowable - a Kantian *Ding an sich* - or else it is that which is present to us in the immediate object when the latter is satisfactory.

The argument Ransdell makes here about the real being what is present in the immediate object (a technical aspect of Peirce's semiotics, after all) is, effectively, the same one that is at the core of Jakob von Uexküll's concept of *Umwelt* and bears on the importance Stjernfelt attributes to Dicisigns.

An *Umwelt* is the means by which organisms capture "external reality in response to semioses. Signs grow – from the organism itself and from elsewhere, other organisms, or in feedback from itself (as in echolocation). The *Umwelt* of a species, then, is composed by the circulation and receiving, insofar as it is physically allowed by an organism's sensorium, of signs (von Uexküll 1992, 2001a, b, 2010; Deely 2009b; the essays in Kull 2001; Brentari 2015). In species that thrive, an *Umwelt* may feature various degrees of semiotic freedom – that is, moments of respite from actions conducive to pure survival – which allow it the opportunity to *anticipate* rather than simply reacting to signs around it (Hoffmeyer 1996 : 58). This possibility is not that far removed from the educated guesses that make up Peirce's "abduction'. Moreover, as with Peirce's semiotics, in the concept of *Umwelt* there is the realization that beyond species" capacities of semiosis there is a world – the "real world", in one sense – which cannot be reached. In any *Umwelt*, misinterpretation of signs, overlooking of signs and signs not being 100% adequate representations of reality, maintain any species, to some extent, in a state of illusion. That being the case, workable propositions or signs of fact assume paramount importance for any organism.

It is for this reason that biosemiotics and Dicisigns, in Stjernfelt's analysis, really need each other. As Sebeok repeatedly pointed out (see, for example, 1986: 14), usually referring back to a concise formulation by Francois Jacob, the testimony that an *Umwelt* is a fairly good guide to reality – a workably accurate model – is offered by the survival of the species within a given *Umwelt* . If an *Umwelt* offered an irredeemably faulty grasp of reality, then that species would not survive. Stjernfelt (2014: 141) puts it even more succinctly and with respect to a specific class of signs: "Selection forces the survival of truth-bearing signs – Dicisigns". He goes on (2014: 141-142),

> Evolution then subdivides, sophisticates and articulates quasi-propositions, gradually achieving growing autonomy of its parts. So, instead of an ongoing construction from building-blocks, semiotic evolution is rather the ongoing subdivision, articulation and autonomization of a reasoning process having its very first proto-form in primitive metabolism.

One observation that Stjernfelt (2014: 141) makes in this respect inverts the common sense way in which Western education usually teaches about complex entities. He suggests that, in considering evolution, it is tempting to imagine the earliest signs to be simple and the later ones to be more complicated. However, it is the highest Peircean sign types (propositions/Dicisigns and Arguments) which, because of their relation to fact, are the most critical for survival. Stjernfelt argues that such signs must have been present at the very beginning of evolution "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".

Connected with this revealing inversion of common sense, Stjernfelt also casts doubt on attempts to map evolution in phases which correspond with a putative hierarchy of signs over periods of time. In such mappings it is not just a matter of phylogenesis recapitulating ontogenesis but sign phases putatively integral to ontogenesis occurring in the same order phylogenetically. Merlin Donald's influential volume, *The Origin of the Modern Mind: Three Stages in the Evolution of Cognition and Culture* (1991), is an example of this perspective. In biosemiotics, Terrence Deacon's landmark volume, *The Symbolic Species* (1997), is another example; plus, it implements Peircean semiotics at some length, in a persuasive and thoroughly interdisciplinary synthesis. As Stjernfelt remarks (2014: 142), Deacon's idea is that "icons, indices, and symbols characterize large phases of biological evolution so that early biology was iconic, later to become indexical while only human beings process symbols". Deacon shows that each of these sign functions is nested: that is, an index contains the functions of icons, while a symbol contains functions of both indices and icons. This take on the trichotomy, as has been seen, is by no means uncommon; but what Deacon does with it in order to explain the evolution of language, with its scarcely conceivable gradualism and its hitherto unfathomable leaps of development, certainly is uncommon. However, for Stjernfelt the pure icon, signifying on the basis of resemblance, could never result in an index, where the signification is based on an existential relationship with the object. Pure indices are similar in this respect. They cannot signify on their own. So, too, is a pure symbol: "bereft of any iconical or indexical qualities is equally marginal - something like the isolated x of algebra" (2014: 143). The necessity of such collaboration of icons and indices within symbols:

> forms the basic reason why the tempting idea of mapping the icon-index-symbol triad
> onto the process of evolution is doomed to fail: pure icons, indices, symbols are

marginal phenomena. So, there could never have been an evolutionary period where purely iconic signs prevailed - they are much too vague to communicate any information of value for biological processes, because their content is merely possible and does not, in itself, relate to the actual world. And there could never have been a purely indexical period - indices being attention-directing and based on the here-and-now, they are unable to perform the central task of orienting and guiding biological activity into the future which requires the generality of the symbol. Rather, biological processes are characterized, from the very beginning, by the argumentative arc leading from one Dicisign to the next, typically, from primitive perception to primitive action - and the decisive criterion is that of being susceptible to deception.

These, of course, are good Peircean points which complement the inversion of common sense in respect of complex signs coming first. Later (2014: 148) Stjernfelt makes a similarly convincing inversion in respect of cognition and communication, stating that the former is a much more simple process in that it requires, at low levels such as bacteria, an organism and an environment, whereas communication requires at least two organisms (and probably an environment, too). The earlier point about evolutionary efficiency obtains, as well: that is, isolated icons and isolated symbols are too vague to carry out the more precise, fact-orientated work that is performed by the combinatorial form of a Dicisign.

Yet, strong those these points are, particularly in technical Peircean semiotic terms, they do not constitute the end of the story. Three challenges can be made. Firstly, is the nesting in Deacon's utilisation of the second trichotomy of Peircean signs really in the service of positing pure sign functions (e.g. iconic only), let alone pure significatory epochs? Readers will need to closely consult Deacon (1997), in an interpretative mode, to answer this

question. Secondly, evolution of humans has surely been more rapid with the advent of the symbol – it has prevented the rudimentary trajectory "from primitive perception to primitive action" (Stjernfelt 2014: 143) continuing endlessly, without development. Surely, there must be some qualitative difference in the semiotic regime that features a sign that allows projection into the future and contemplation on the past. The ability of humans to refer to their signs, an ability which requires a command of symbols, has been foregrounded by thinkers as different, but related, as Cassirer ([1944] 1972) and Deely (2010). Both recognize Ransdell's observation that the symbol has "no value as a sign from anything but the fact that it will be interpreted in a certain regular way", thus being hostage to future interpretations. Thirdly, there is the possibility that propositions, signs of fact or Dicisigns were distributed, in their own way, across the domains of the "lower" signs in evolution. That is, "fact" functioned in a fashion that was quite removed from the more elevated vision implied by a proposition. Kull (2007: 2) offers a programme of knowing that distinguishes life and semiosis: it consists of faculties of recognition, memory, categorization, mimicry, learning and communication. Assigning each of these to the sign functions, or a blended combination of the sign functions, of the second trichotomy would not be difficult. Those functions do not need to be pure, nor do they need to be divorced from propositional value. Fact, in the sense of relatively efficient capturing of external reality, could surely have occurred by chance in domains of largely iconic or indexical signs. Vagueness, after all, is inherent in all signs, as Peirce shows; it must offer an opportunity not just for humans but for all other areas where signs have "an effect upon a person" (a phrase that should now be interpretable in anti-psychologistic terms).

Regardless, what is clear is that Peirce's semiotics, in the sphere of biosemiotics alone, facilitates numerous investigations which would not have ensued without his work as

backwoodsman. Peirce's general definition of semiosis is one that drives biosemiotics (see Chapter 3, this volume, below). His synechism (not discussed here, but see Cobley 2016) is implicit in biosemiotics' lowering of the threshold of semiosis from, say, literature, to the level of the cell. Peirce's cosmology, too, has clearly prompted the development by Deely (1990: 83-104) of "physiosemiosis", which challenges biosemiotics' insistence that life and semiosis are co-extensive and, as has been seen, the idea that the triadic sign has a fourth element in the behaviour of animals. Indeed, as Nöth (2001: 16) identifies, "Charles Sanders Peirce is the crown witness of both the advocates and the opponents" of physiosemiosis. Along with the recapturing of Peircean semiotics' anti-psychologism, the starting point of this section of the present essay, Deely's work in his final years (e.g. 2014, 2015), on the "suprasubjective" indicates the triadic relation above common signs that moves semiotics into all manner of realms.

Conclusion

Fittingly, given the centrality of the concept of the growth of signs in his work, Peirce's semiotics is very fecund. It has been seen that Peirce's sign theory in general semiotics has been the subject of debate, as it should be, and has been the subject of some measure of malformation, as is inevitable with all endeavours of this magnitude. It is only fortunate that Peirce's semiotics did not suffer the fate of being buried forever. Its malformation has probably been most pronounced in the fixation of later semioticians on the second trichotomy. This is not unrelated to the attempt to assimilate Peirce's work to existing semiotic perspectives, in particular those which tried to enforce invariance (or codes) in ways that are at odds with the interpretative bent of Peirce's semiotics. Despite his "sop to Cerberus", Peirce's semiotics is not just a matter of signs as they are used by humans, as it largely is in the communication theory that grew up alongside semiotics in the latter part of

the twentieth century (Cobley and Schulz 2013). Peirce's semiotics is concerned with all semiosis: in life, in the cosmos. It also recapitulates, in a sophisticated sense which does not exclude the entities that a sign is *for*, the mission of semiotics to be concerned with signs over and above individual uses of them.

It should be observed, of course, that the representation of Peirce's semiotics taken here has also been partial, not least because of the largely chronological approach and what has had to be left out. Chronologically, with the deviations noted, the sequence has been

Peirce's writings (1923 to the 1950s and beyond)

Jakobson (1965)

Eco (1976)

Fisch (1978)

Ransdell (1977)

Sebeok (1980)

Merrell (1998-2001)

Nöth (2011)

Petrilli (2015)

Deely (2006; really 2009)

Stjernfelt (2014)

Discussion of some major scholarship in Peircean semiotics has had to be omitted. Morris most regrettably, but, in addition to those mentioned in the introduction to this essay, the omitted work of the following established Peircean semioticians would demand following up by the reader: Vincent Colapietro (see Cobley 2014), Dinda Gorlee, Claudio Guerri, Tony

Jappy, James J. Liszka, Torkild Thellefsen and Bent Sørensen, et al. There are also emerging Peircean semioticians, present and future interpretants of sign study, that were overlooked here; among those are Francesco Bellucci, Priscila Borges, Yunhee Lee, Alin Olteanu, Jamin Pelkey. Indeed, in the discussion of Peircean semioticians that did occur in this essay, the cursory glance at their work does not do justice to their prodigious contributions in the field.

Short of falsity, it is meet that imperfections act as a call for further dialogue and work. "Out of a contrite fallibilism", writes Peirce, "combined with a high faith in the reality of knowledge, and an intense desire to find things out, all my philosophy has always seemed to me to grow. . . ." (CP 1.14)

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