



Cultural pragmatism and the *Life of the Sign*

Gary Richmond
City University of New York

Abstract

Wanting to catalyse new approaches to interdisciplinary inquiry and practice within the field of journalism, media, and cultural studies (JMC), Shepperson reconceived interdisciplinary relationships in the light of the highly original – and still not fully understood – work of the American scientist, philosopher and logician, C.S. Peirce. Shepperson approached his reconceptualisation of interdisciplinarity in ways meant ‘to bear on the global dimension of the human condition’, even imagining that, as a consequence of their own evolving practice, such disciplines as JMC might begin to influence the general ethic of societies in ways which could meliorate social conditions. While he did not live to complete this work, his pioneering research in applying Peirce’s pragmatism to inquiry into the social realm can be seen as preparing the theoretical foundations for a new discipline, *cultural pragmatism*.

Keywords: abduction; abnumerable collection; architectonic; category theory; critical commonsensism; C.S. Peirce; cultural pragmatism; interdisciplinarity; normative science; potential population; pragmatism vs. pragmatics; realism vs. nominalism; semeiotic vs. semiotics; social justice; theory of inquiry

[Note: The peculiar spellings of ‘pragmaticism’ and ‘semeiotic’ identify them as Peirce’s distinct versions of pragmatism (as opposed to, say, Dewey’s or Rorty’s) and semiotics (as opposed to, especially, those deriving from Saussure’s linguistic *semiology*).]

Gary Richmond teaches philosophy and critical thinking at City University, New York. At LaGuardia College’s *Center for Teaching and Learning*, he leads faculty seminars in information literacy and learning community pedagogy, and he is a leader in its acclaimed ePortfolio program, presenting at such institutions as Boston University and the New School for Social Research.

 criticalarts
22 (2) 2008
DOI: 10.1080/02560040802469621

 Routledge
Taylor & Francis Group

UNISA 
UNIVERSITY OF SOUTH AFRICA
PRESS

ISSN 0256-0046/Online 1992-6049
pp. 155-165
© Unisa Press

Gary Richmond

If we had to name anything which is the life of the sign, we should have to say that it was its use. Ludwig Wittgenstein

Every symbol is a living thing in a very strict sense that is no mere figure of speech. The body of the symbol changes slowly, but its meaning inevitably grows, incorporates new elements and throws off old ones. Charles S. Peirce

When Peirce defines a sign as representing an object to an interpretant, he is describing a social process occurring in time. That process is where the sign lives, and the life of the sign is no metaphor. Eugene Halton

Introduction

In the final years of his life Arnold Shepperson began to take significant steps towards applying to his own field of cultural studies some of the boldest, most advanced, and most pregnant ideas of Charles Sanders Peirce (pronounced *purse*), the logician and scientist who has been called ‘the most original, versatile, and comprehensive’ intellect that America has yet produced. Seeing a unique value and power in Peirce’s thought and method for inquiry generally, Shepperson began to creatively apply Peircean pragmatism to especially the interdisciplinary aspects of cultural studies.

The truly ground-breaking work of Peirce, the discoverer-inventor of both philosophical pragmatism and modern semiotic, remains for the most part unknown, at least in the sense in which Peirce conceived it.¹ The consequence is that his philosophy has had little or no significant impact on many of the disciplines in which it might have proved most beneficial, including journalism, media, and communication studies (JMC). Besides its intrinsic difficulty, a likely reason for this neglect is that Peirce’s highly original and breathtakingly comprehensive scientific work is often confused with other theories having very different emphases. For example, the pragmatism which he introduced is often conflated with such ‘classic’ psychological and instrumental transmutations of it, as represented by William James and John Dewey respectively. In addition, it is not infrequently interpreted (I should say, misinterpreted) as equivalent to certain selective and partial uses of it, for example in the work of Jürgen Habermas or that of Umberto Eco. Finally, pragmatism has even been conflated with such distortions of it as one finds in the work of Jacques Derrida or with that particularly virulent strain of veritable anti-pragmatism represented by the late Richard Rorty’s writings.

Similarly, semiotic has at least until recently tended to be associated with the dyadic semiology deriving from the strictly linguistic analyses of Ferdinand de Saussure. Shepperson, seeing the unique value of Peirce’s essentially radically different triadic semeiotic² – in which sign theory *not* incidentally culminates in a theory of inquiry – found it a stimulus to his own research, suggesting possible approaches to overcoming the cultural nominalism and relativism which have

created something of an intellectual impasse in any number of disciplines and interdisciplinary pursuits. Indeed, he saw pragmatism and semeiotic as having the potential to contribute mightily to the resolution of some of the ‘wicked problems’ in these disciplines and domains. While there has recently been no scarcity of thinkers applying selected principles of semeiotic and pragmatism to various disciplines and associated institutions operating in the real world,³ what seems especially important in Shepperson’s work is that he initiates, within a broad interdisciplinary inquiry, a consideration of the application of many of the principal threads of Peirce’s vast architectonic philosophy in ways which go beyond the theory itself, boldly and creatively moving in the direction of their possible practical application.

Peirce once commented that inquiry principally concerns itself ‘with conjectures, which are either getting framed or getting tested’ (CP 1.234).⁴ In this short article I can only hint at how Shepperson began to frame – relative to cultural and JMC studies – some of the most important interdisciplinary methodological conjectures and hypotheses following from the furthest and richest implications to be drawn from Peirce’s work, especially his theory of inquiry. I will first discuss why I believe Peirce became such a decisive influence on Shepperson. I’ll then briefly comment on the definitively pragmatic thrust of Shepperson’s mature work, focusing my analysis on arguably his most Peircean paper, ‘Realism, logic, and social communication: C.S. Peirce’s classification of science in communication studies and journalism’ (abbreviated RLSC⁵ below), which takes up, to some extent, nearly all the significant themes of semeiotic and pragmatism which might conceivably be applied to cultural studies and JMC. Shepperson’s almost all too rich paper will, I believe, some day be seen as seminal work in what I am beginning to think of as a potentially new discipline, *cultural pragmatism*, a field for which Shepperson had just begun to lay the groundwork.

Making Peirce pragmatic⁶

I first became acquainted with Arnold Shepperson on Peirce-I, an exceedingly lively electronic forum created by the noted Peirce scholar, Joseph Ransdell, in conjunction with his developing *Arisbe* as an electronic ‘gateway’ to all things Peircean. As Arnold suggested in a footnote in RLSC, the dynamic, democratic, and deeply interdisciplinary give and take of Peirce-I conversations can facilitate one’s quickly gaining clarity on even the subtler aspects of semeiotic and pragmatism – essential for Shepperson, as he began to relate these to issues in cultural studies. Following a number of exchanges on and off the forum, after several months I was delighted to receive drafts of some of Arnold’s papers. I soon began to see that not only had he grasped the rather neglected social thrust of Peirce’s rich architectonic philosophy, but he was beginning to apply his understanding in creative ways to the possible resolution of certain difficult issues in interdisciplinary research within his field.

Peirce's eminently scientific work⁷ is not intended merely to, say, expand and deepen a person's intellectual understanding of sign relations. Or rather, while his theory most certainly preeminently concerns itself with these relations and their possible evolution, it is a core principle of semeiotic that semiosis (sign action) is a *living process*, whether one is considering certain signs of biological evolution or, say, the signs and symbols of the development of a potent idea, or even signs of the growth of an organisation or institution. The crucial point is, as Peirce succinctly put it, 'signs grow'. Thus at the heart of pragmatism – as the very name might suggest – there is a concern that inquiry be directed to the reality of changing relations and, perhaps most especially, the possibility of the evolution in the future of such complex and subtle relations as those encountered in interdisciplinary cultural studies.

One of the challenges for Shepperson's project is that, while frequently invoked, Peirce has been severely neglected to the extent that the most original and promising components of his work are not yet well understood – if they are known at all. Very few have read – let alone studied – the work of the intellect whom Ernest Nagel called 'the most original, versatile, and comprehensive philosophical mind that the United States has ever produced'. When he is known at all it is usually, and rather vaguely, as the founder of philosophical pragmatism. Yet, even within academia, although not infrequently characterised as a towering figure in American philosophy, for a number of reasons Peirce has been fairly fully marginalised, so much so that Shepperson commented in the 'Logic of hazard' that Peirce's 'exclusion from the mainstream of American academic history may be one of the great scandals of the twentieth century'.

It has been argued that misconceptions concerning the exact nature of Peirce's thought came about because in the early 1900s several influential logicians, theoreticians and philosophers, whose work was to some extent influenced by him, tended to be what the novelist and essayist Walker Percy called 'thieves of Peirce', lifting what they wanted (typically with little or no credit given to him) and 'leaving the rest'. However, even more damaging is that those who lifted 'this or that' from Peirce's work almost invariably distorted his original concepts and theories.⁸ The result has been that his pointedly scientific philosophy has only rarely been clearly comprehended and, even then, only in piecemeal fashion. The consequence of this neglect is that precisely those facets of his work which might be of the greatest interest and potential value to, for example, the readership of this journal – notably his theory of inquiry as it relates to interdisciplinary studies – have been almost entirely ignored in the literature. In my view, were it not for the project which Shepperson began, those disciplines and interdisciplinary fields which might most benefit from a thorough study of Peirce's philosophy – his ground-breaking theory of inquiry, architectonic classification of the sciences, profound analysis of the nominalism-realism question, and his potentially revolutionary development of logic as semeiotic – would have a considerably diminished chance of ever even coming upon authentic pragmatism.

Society, reality, and cultural pragmatism

In RLSC Shepperson argues that JMC properly inquires into forms of social conduct coming out of *vague assumptions* and claims about ‘the quality of the human condition’, the sense that certain things are, for example, ‘right’, ‘fair’, or ‘true’. At the same time it is obvious that researchers in institutions, such as universities, as well as practitioners, for example, journalists, will themselves express modes of conduct following from their own vague ethical assumptions. Peirce considered the ultimate goal of pragmatism to be the modification of conduct, the central idea being that through self- and hetero-criticism communities could more and more find agreeable goals, principles, and practices for catalysing their evolution. He called this kind of social collaboration in inquiry ‘critical commonsensism’ since it valorises ‘the social character of theoretical knowledge in a community of investigators’ (Helmut Pape).

For Shepperson, academic and professional JMC disciplines are essentially engaged in the study of contemporary societies, such that ‘media and journalism are strictly understandable only within the ambit of the modern social realm’. It is the nature of such inquiry that it is always experimental, always experiential and in flux. And while he does not claim a unique JMC ethic, he does argue that certain disciplines have the potential for contributing something of unique value in helping to determine what the general ethic of a society is and, perhaps, is *becoming*. This follows from his understanding JMC studies as involving *normative* aspects in Peirce’s sense of their inquiring into how we act, react, and interact with the world. The further development of such normatively informed disciplines and sciences, especially in their interdisciplinary relations, could help stimulate societies toward a greater understanding of their ethical presuppositions, perhaps spurring them on to consider what ought to constitute their own cultural *summum bonum*. This is conceivable because ‘every developed modern society is a more or less successful experiment that tests some asserted hypothesis, of a very general nature, about how human society ought to work’. Shepperson imagined that journalism, the media, and communication studies generally had an important role to play in bringing to critical awareness ‘how human society ought to work’, especially should these disciplines be able to shed the nearly pervasive nominalism and relativism which up until now have prevented such self-awareness and self-criticism occurring at the levels and in the ways needed.

In a review of *The essential Peirce*, Shepperson comments that it is important in virtually all fields to finally come to grips with Peirce’s ‘underlying claim that we can only understand the Universe insofar as the Universe is like us, who are (body and mind) in it and not apart from it . . . [but that unfortunately] there is a tendency towards radical nominalism that underpins the entire tradition of modernity, whether philosophical, social, political, or cultural’. Nominalism has dominated the intellectual landscape⁹ for so long that such vague ethical assumptions as mentioned above appear to many to be ‘mere words’ rather than, as Peirce thought of them,

living realities and *real powers* to influence individuals and societies in ways which might help bring about significant positive change. In this ‘age of rampant cultural relativism and anti-intellectualism’ it was Shepperson’s hope that the introduction of pragmatic realism into cultural studies and JMC practice might have a far-reaching and beneficial influence.

[Peirce’s] real influence is yet to be felt, and whether this develops directly from his actual philosophy, or in response to it, is an open question. [His] greatest value in either case lies in his trenchant and logically thoroughgoing realism, whether in the areas of phenomenology, ethics, logic, metaphysics, or epistemology.

Assuming for a moment that there is a real methodological value in pragmatism, the question remains as to how it is to be developed within JMC inquiry. We now turn to this difficult question, the answer to which – if it is ever to be answered at all – will ultimately have to come from those who are actively and creatively involved in cultural studies and JMC disciplines.

Peircean Theory of Inquiry for JMC

It is one of the principal tenets of RLSC that there is a growing need ‘to begin to reconceptualize important interdisciplinary relationships’ within JMC in the interest of catalysing fresh approaches to, for example, cross-disciplinary research in these fields. Shepperson argues that Peirce’s architectonic *classification of the sciences* can provide the basis for ‘a possible presuppositional classification of media and journalism inquiry’. While he did not claim to have arrived at the final classificatory schema,¹⁰ I believe that his approach nevertheless warrants serious consideration as representing ‘a genuine option for bringing the practices of JMC to bear on the global dimension of the human condition’, a decidedly worthy – if ambitious – project.

In line with Claude Shannon’s notion of the media as a channel for the delivery of messages, Shepperson argues that the focus of media studies should be on the media ‘as the means of distribution of messages, and not on the messages themselves’. Exactly parallel to this, and following from Peirce’s definition of a sign as standing between some object and an interpretant of it, Shepperson holds that the media are ‘not *what they transport*, but the techniques that *make such transport possible*’. At one end of this process is the producer of the message, while at the other end is the consumer as interpreter of that message. In this model the media stand exactly between the producer (say of journalistic reports) and the consumer (the reader or viewer of such reports). This essentially triadic structure follows from Peirce’s insight that the sign process invariably involves *genuine trichotomic relations*,¹¹ that there will always be a medium, always a ‘between’, and that while the other two components are clearly essential and of no less significance, the semiosis itself – *the life of the sign* – requires the third, requires the medium. How this bears on the

question at hand will become clearer, I hope, in briefly considering Peirce's theory of inquiry in relation to JMC.

Peirce conceived inquiry as a process involving three stages, the first being what he termed *abduction*, that is, the forming of a testable hypothesis; the second, the *deduction* of the implications of the chosen hypothesis for possible testing; and the third, *induction*, being the actual testing of the hypothesis to see to what extent it actually conforms to the reality of the matter being investigated – this last phase of the inquiry requiring the sampling of a population. Shepperson argued strongly that the kind of sampling appropriate to most JMC inquiry is a little understood variety *not* relying on statistical probabilities. This alternative approach is necessary because 'the persons, collections and institutions that make up the social realm do not constitute a collection that can be validly sampled statistically'. In this model JMC inquiry is not essentially concerned with collections whose members can be *presently counted* (e.g. a census), nor even those which form a *partial ordering* (e.g. the generations of a given society). Rather, he holds that, as JMC concerns itself with ever-changing populations tending towards the future,¹² it ought to sample *potential* populations, what Peirce called *abnumerable collections* (as opposed to the denumerable and enumerable collections just mentioned parenthetically above). Shepperson noted that since the very subject matter of JMC studies, the social realm, is itself an abnumerable collection, statistical sampling could result in distortions, kinds of 'freezing' of the characters of what are essentially ever-changing, perhaps evolving populations. Furthermore, potential collections involve what Peirce refers to as *would-bes*, or that which would occur if certain conditions were brought about (for example, if all young people in a given society were provided internet access) and this too relates to the ethics involved in JMC inquiry and practice.

This emphasis on potential populations does not deny that in specific contexts and under certain conditions statistical sampling is not desirable in JMC research. But Shepperson's argument strongly implies that, when considering the social realm, it is not possible to 'draw necessary conclusions about the human future'. All researchers can do is to 'continually test our hypotheses against experience, correcting as we learn from the errors that this experience reveals'. It was Shepperson's hope that JMC inquiry could develop exemplary methods and techniques for sampling abnumerable collections so that its findings would tend 'over the long run to approximate to true assertions about social and human reality'.

Conclusion and prospect

Shepperson's work is especially challenging in that he was not only introducing Peirce's complex and difficult logic as semeiotic (with its occasionally daunting terminology) to an audience unlikely to be familiar with it, but beyond this, and in ways which seem to me to have previously never been so broadly attempted, to extrapolate these ideas to possible modifications of practice within communities. Yet

despite these challenges, RLSC appears to me to be an excellent place to start for anyone who might want to further consider Shepperson's pragmatic approach.

I would like to conclude this article with a comment on one of the aspects of Shepperson's work which has most deeply resonated with me, namely his concern for what he called the 'quality of the human condition'¹³ especially, but not only, as it is impacted by the practices of journalism and the media. For example, he argues that although there are unquestionably some significant differences between traditional and postmodern media habits in South African society, new media could come to accommodate these older habits while at the same time moving in the direction of a fuller range of communication capabilities (which a younger generation seems determined to further explore in any event). In this regard I am especially struck by his profound observation that the traditional is not ultimately based on some absolute sense of eternal verities which must be passed from generation to generation, but that traditional habits and traditional responses were, at least for certain populations, 'developed by those excluded from the social realm as a means of maintaining their best possible interpretation of what makes them human'. It was his hope that some future generation would begin to, as Nietzsche phrased it, 'redeem the past', that is, overcome the inequities of the past and thus honour the memory of those who were denied justice.¹⁴

I have tried to show that Shepperson's unfinished work provides a valuable basis for further research into the theory and possible practice of an emergent *cultural pragmatism* with the potential to eventually exert a global influence. While Shepperson offers what is tantamount to a preliminary outline of this possible field in RLSC, the theory is decidedly not yet fully formulated and, thus, a task for future researchers. And it no doubt goes without saying that the self-reflective and self- and hetero-critical practice which might follow from applying that theory is at best a distant project. Nevertheless, Arnold Shepperson left us with strong suggestions as to how we might proceed in the project he had initiated, offering illuminating 'hints' for further developing his pioneering work in applying Peirce's pragmatism to inquiry into the social realm.¹⁵ I have little doubt that those willing to explore the new territory which Shepperson had only begun to chart will come back amply rewarded for their efforts.

It has been said that the modern world is fractured intellectually and in need of new ideas which may enable it to break through its current abstractions (Whitehead). Of course, not everyone who strays off the traditional reservations will discover something worthwhile, but without the spirit that sustains such ventures there can be not hope for the future of civilization. Bruce Buchanan

Acknowledgements

I want to thank Keyan Tomaselli for inviting me to contribute to this *Festschrift* honouring Arnold Shepperson. Thanks also to those who read this article in advance of its publication: I am indebted to Aldo de Moor, Eugene Halton, Michele Piso, Joseph Ransdell and James Sullivan for their suggestions and critical comments. I am most of all grateful to have known Arnold, even if only through the medium of the Internet, to have been exposed to the highly original work of an extraordinary scholar, a person of profound character who cared deeply about the human condition.

Notes

1 Peirce introduced the term *pragmaticism*, a word he thought ‘ugly enough to be safe from kidnappers’, to distinguish his original conception from the several other ‘pragmatisms’ which were appearing in the late nineteenth and early twentieth centuries. (Note that in this article *pragmatism* will refer to Peirce’s original conception exclusively; I find his neologism as ugly as he imagined it to be.)

2 Many semioticians have taken to using a spelling Peirce himself often used, *semeiotic*, to distinguish his triadic theory of signs from other sign theories, and I will do so from here on.

3 For example, aspects of Peirce’s original work in graphical logic, including John Sowa’s morphing of Peirce’s existential graphs (EGs) of logical relations into conceptual graphs (CGs) suitable for use in our computational and Internet era, have found a central place in certain knowledge representation (KR) communities. In mathematics Rudolf Wille has developed the lattice theory, which Peirce invented, to become what is today known as Formal Concept Analysis (FCA). It is important to remark in this connection that there is a principle of continuity involved in Peirce’s architectonic, such that there is no idea of an entirely independent field or discipline. Thus, such an essentially mathematical theory as the just mentioned FCA for *ordering relations* in lattices is reflected in pragmatism, in its methodological requirement that theory be connected to practice, that is, to *practical consequences*.

4 CP refers to the *Collected Papers* of Peirce, the present reference being to Volume 1, Paragraph 234.

5 All quotations in this article are from RLSC, unless otherwise noted. The full text of the paper can be found at *Arisbe*: <http://www.cspeirce.com/menu/library/aboutcsp/shepperson/jmc-arisbe.htm>

6 This was a title Aldo de Moor suggested for a co-authored paper which we eventually published as ‘Towards a pragmatic web’ and in which we initiated a project intended to apply pragmatism in support of the social dimension of the developing semantic web. ‘Making Peirce pragmatic’ seems quite apt for this section of the article.

7 ‘His output includes major writings on mathematics, metaphysics, geodesy, astronomy, economics, phenomenology, and logic; he also produced . . . relevant work in physics, metrology, engineering, cartography, and lexicography, amongst others.’ A.S.

8 John Sowa, for example, in considering the work of Bertrand Russell and several other influential early twentieth century logicians, has argued along these lines.

9 For example, nominalism is represented in philosophy by the empty analytical tradition on the one hand, and by, ultimately, equally empty hermeneutic phenomenology on the other.

10 Although the present article does not take a critical stance in regard to RLSC, it must nonetheless be remarked that, while it is certainly true that the normative sciences provide principles for those researches which follow them in Peirce's architectonic classification, Shepperson's characterisation of JMC disciplines as 'normative' is probably best interpreted as referring to the influence upon them of Peirce's three strictly theoretical normative sciences (namely, theoretical aesthetics and ethics, and logic as semeiotic). Peirce remarks that 'there are practical sciences of reasoning and investigation, of the conduct of life, and of the production of works of art [that] correspond to the normative sciences, and may be probably expected to receive aid from them' (CP 5.125).

Somewhat more problematic is Shepperson's division of JMC disciplines into Peirce's trichotomy of 'descriptive', 'classificatory', and 'nomonological' (i.e. expressing laws). In Peirce's classification these refer essentially to the 'special' physical and psychological sciences, while in my view JMC disciplines are more properly placed within Peirce's schema as 'practical' sciences, or perhaps somewhere between the special and the practical sciences. Still Shepperson is undoubtedly correct in seeing that there is a deep interpenetration of the characters of the various branches of science. Peirce comments: '[Most important] are the dynamical relations between the different sciences, by which I mean that one . . . may stimulate another by demanding the solution of some problem. In this way, the practical sciences incessantly egg on researches into theory' (CP 7.52).

11 The thrust of my own recent work, *trikonic*, is the development of trichotomic *category theory*, so pervasive and potent in Peirce's philosophy that he wrote that a fully developed science of trichotomic would constitute 'one of the births of time' (CP 1.354).

12 He gives as an example the consideration of developing audiences for, say, a certain genre of film.

13 '[T]he principal political purpose of any society is to account for the natality and mortality of the human condition. The ultimate benefit of a social realm is . . . to reduce the possibility that individual citizens, and latterly groups of citizens, are structurally deprived of the opportunity to get the best quality of life *as mortals*.' A.S.

14 Some of these themes are reflected in the work of Cornel West, for example in his recent book *Democracy matters*. See also the concluding chapters of Edmund Arens's *The logic of pragmatic thinking*.

15 Ervin Laszlo suggests that we ought to work to bring about what he calls a 'cultural mutation' in our societies and believes that 'the current political climate is propitious for this: people are extraordinarily responsive when angry or frustrated'.

References

- [CP] *Collected Papers of Charles Sanders Peirce*, 8 vols. Edited by Hartshorne, Charles, Paul Weiss, and Arthur Burks (Harvard University Press, Cambridge, Massachusetts, 1931–1958).
- [EP] *The Essential Peirce* (Vols. 1 & 2). Edited by Houser, Nathan, Christian Kloesel, and the Peirce Edition Project (Indiana University Press, Bloomington, Indiana, 1992, 1998).

- Arens, E. 1994. *The logic of pragmatic thinking: from Peirce to Habermas*. Trans. D. Smith. Atlantic Highlands.
- Buchanan, B. 2001. Spirituality and complex systems. Presentation at the 2001 Symposium on Humanity and the Cosmos, Brock University, Ontario, Canada. <http://www.ceptualinstitute.com/genre/buchanan/brock2001-s-cs.htm>
- De Moor, A. Patterns for the pragmatic web. In *Proceedings of the 13th International Conference on Conceptual Structures (ICCS 2005)*. Kassel, Germany. Lecture notes in artificial intelligence, no. 3596. <http://www.cspeirce.com/menu/library/aboutcsp/demoor/patterns.pdf> Springer-Verlag, Berlin.
- Halton, E. Earth to Manning: a reply. *Symbolic Interaction* 31(2).
- Laszlo, E. 2006. *The chaos point: the world at the crossroads*. Charlottesville: Hampton Roads.
- Pape, H. 2007. The natural and the final: some problems with Short's naturalistic account of the teleological structure of semiosis. *Transactions of the Charles S. Peirce Society* 43(4) (Fall).
- Parker, K.A. 1998. *The continuity of Peirce's thought*. Nashville & London: Vanderbilt University Press.
- Ransdell, J. About Peirce-I. <http://www.cspeirce.com/menu/people/peirce-I/peirce-I.htm>.
- Richmond, G. 2005. Outline of *trikonic*: diagrammatic trichotomic. In *Proceedings of the 13th International Conference on Conceptual Structures (ICCS 2005)*. Kassel, Germany. Lecture notes in artificial intelligence, no. 3596. Springer-Verlag, Berlin. <http://www.cspeirce.com/menu/library/aboutcsp/richmond/trikonic.htm>
- Richmond, G. (with B. Udell). 2004. *Trikonic*. Slide show in PowerPoint format, PORT Workshop, ICCS. <http://www.cspeirce.com/menu/library/aboutcsp/richmond/trikonicb.ppt>
- Shepperson, A. Review of *Charles Saunders Peirce, The essential Peirce: selected philosophical works Vols. I & 2*. <http://www.butterfliesandwheels.com/libraryprint.php?id=19>
- Sowa, J. Signs, processes, and language games: foundations for ontology. <http://www.jfsowa.com/pubs/signproc.htm>
- West, C. 2004. *Democracy matters. Winning the fight against imperialism*. New York: Penguin Press.
- Wittgenstein, L. 1958. *Philosophical investigations*. Trans. G.E.M. Anscombe. New York: McMillan Company.