'We pragmatists mourn Sellars as a Lost Leader': Sellars' Pragmatist Distinction Between Signifying and Picturing

Carl B. Sachs
Department of Philosophy
Marymount University
csachs@marymount.edu

Introduction

The title of this chapter is taken from Richard Rorty (1979a) in which he began to distance himself, via criticism of Jay Rosenberg (1974), from Wilfrid Sellars.[1] Rorty was a committed Sellarsian for the first twenty years of his professional life (Rorty 2010, 8), and his criticisms of Sellars led him to the remarkable *Aufhebung* of Sellars and W. V. O. Quine of 'Privileged Representations', in *Philosophy and the Mirror of Nature* (1979b). Yet it was only a few years previous that Rorty ruefully remarked that he thought that Sellars would have, and should have, been, a pragmatist, and yet failed to do so. Here I shall situate Sellars relative to the history of pragmatism, without simply assimilating Sellars to the pragmatist tradition, to demonstrate that Sellars' relationship to pragmatism is far closer than is widely assumed and that Rorty's rueful remark is misplaced.

Sellars' proximity to the pragmatist tradition has been underappreciated partly because pragmatists still pay too little attention to Clarence Irving Lewis. In his time Lewis was both one of America's most distinguished pragmatist epistemologists. Yet Lewis was sharply critical of his fellow pragmatist John Dewey. Accordingly, I shall begin with a short reconstruction of an underlying tension between Dewey and Lewis as to what pragmatism involves (§1) before turning to an explication of Sellars' distinction between 'signifying' and 'picturing' (§2). There

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[1] 'Those of us who learned from Sellars to think of the Myth of the Given as a confusion of causal conditions with justification are inclined to think that the project of finding connections between inquiry and the world needs elimination rather than naturalization. If one draws this moral one will *not* seek "an Archimedean point outside the series of actual and possible beliefs". So we pragmatists mourn Sellars as a lost leader.' (1979a, 91).

I shall argue that Sellars' distinction can be understood as, among other things, a reconciliation between Dewey and Lewis. I will then conclude with a brief examination of the signifying/picturing distinction based on recent work by Jay Rosenberg, Johanna Seibt, and Huw Price (§3). I shall argue that this distinction, best understood as a distinction between discourse (signifying) and cognition (picturing), is crucial for contemporary pragmatism (§4).

One note before I begin: I will not address the pragmatism and what Sellars calls 'the Myth of the Given'. I agree with Richard Bernstein's (2010) assessment that the rejection of the Given is already to be found in Charles S. Peirce (as well as William James and Dewey). Even Lewis, for all his talk of 'the given', does not commit himself to the Myth of the Given.[2] Any further discussion of the Myth of the Given in relation to pragmatism on my part would be redundant.

Lewis' Anti-Deweyan Pragmatism

To set the stage for Sellars' contribution to pragmatism, I shall begin with an examination of Clarence Irving Lewis. In his intellectual autobiography (in Castañeda 1975) Sellars remarks that 'the highlight of that year (at least I *think* it was that year) was a seminar in C. I. Lewis' *Mind and the World Order* led by John Austin and Isaiah Berlin' (287).[3] Here I shall briefly sketch some prominent themes from Dewey's version of pragmatism to indicate how Lewis offers a deeply non-Deweyan or anti-Deweyan pragmatism, and why this matters for the tensions that Sellars undertook to resolve.

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[2] For a detailed examination of this claim, see Hookway (2008) and Sachs (2014).
[3] As this would have been spring of 1937, *Mind and the World Order* would have been published eight years previous.

In contrast to the Platonic/Cartesian/Kantian axis, Dewey – building on the work of previous pragmatists – argued that human mindedness, in all its various permutations and elaborations, developed from forms of intelligent behavior in the animal world. What we can call culture – what Hegel called *Geist* or 'spirit' – is not something set apart from 'nature' but rather is itself natural and developed from other kinds of natural intelligence.[4] Dewey's naturalized philosophical anthropology is richly informed by the psychology and biology of his day, including German psychophysics and Darwin's revolution in evolutionary theory. For Dewey, philosophy is not a self-enclosed conversation amongst Great Minds but a critical reflection on the problems and issues of concern to society and to human flourishing. The Deweyan philosopher is a public intellectual engaged with the problems as she finds them in the society of which she is a member and citizen. Thus she cannot, as a philosopher, disengage herself either from politics or from science.

In his 'The Influence of Darwinism on Philosophy' (MW 4), Dewey argues that Darwin's revolution is directly relevant to how we think of what we are doing when we do philosophy. Since to be a living thing is to be an organism situated in an environment, and continually confronted with the problems immanent to the situations in which it finds itself, so that it must engage in some rudimentary problem-solving – whether by learning or by evolving – then this must be true of human beings as well. Hence we should think of human beings less as 'rational animals' and more as 'clever beasts'. The marks of human uniqueness – language, culture, and technology – not only have antecedents elsewhere in nature but were shaped by the same general forces that shaped the webs of spiders, the dams of beaver, and the songs of whales. Dewey's comprehensive philosophical vision stems from reconstructing traditional concerns of

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[4] See *Experience and Nature* (1925/1982); see also *Logic: The Theory of Inquiry* (1948/1986), esp. Chapter 2, 'The Existential Matrix of Inquiry: Biological'.

epistemology, metaphysics, ethics, aesthetics, and political philosophy from a vantage-point afforded by the growth of psychology and biology in the sciences and the experiments in democracy in the decades between the Civil War and the Cold War.

Dewey does not, however, have the last word as to what counts as pragmatism. C. I. Lewis developed a version of pragmatism in his *Mind and the World Order* (1929) (hereafter *MWO*), also indebted to Peirce and James, but strikingly different. Unlike Dewey, Lewis had little interest in the empirical sciences and had no political theory to speak of; also unlike Dewey, Lewis was primarily interested in problems arising in the development of mathematical logic; he wrote a textbook of symbolic logic and developed what he called 'conceptual pragmatism' by reflecting on the fact of plurality of logical systems.

Conceptual pragmatism consists of (1) recognition of open-ended plurality of incompatible conceptual systems, including both natural and formal languages; (2) the absence of any definitive criterion for asserting that some conceptual system carves nature closer to the joints than its rivals; and hence (3) the role of human interests in deciding choice of conceptual system, which includes the trade-off between simplicity of notation and approximating patterns of human inference, and also, in the case of empirically meaningful language, the choice of categories that constrain how the given is interpreted.

All this clearly puts Lewis in the pragmatist heritage, and he saw himself as the heir of Peirce, Royce, and (to a lesser extent) James. Yet while he admired Dewey and agreed with him about much (Lewis 1930/1970), the differences are no less crucial. Though Lewis also thinks that epistemology must be reconstructed in response to new developments in human knowledge, he differs from Dewey as to what the most salient developments are: 'Whoever has followed the developments in logistic and mathematical theory in the last quarter century [1900-1925 -- CS]

can hardly failed to be convinced that the consequences of these must be revolutionary' (Lewis 1929, vii). In other words, *modern symbolic logic is to Lewis as evolutionary theory is to Dewey.* Lewis shares Dewey's commitment that epistemology should be engaged with and responsive to the most epistemically authoritative developments of one's own time and place. Epistemological reflection cannot be independent from actual instances of our best examples of what counts as knowledge, whether in modern symbolic logic or general relativity.

But although Lewis' epistemology is informed by current developments in mathematical logic and fundamental physics, there is one important qualification:

> The reflective attitude is pragmatic in the same sense that it is empirical and analytic. It
> supposes that the categories and principles which it seeks must already be implicit in
> human experience and human attitude. … But the reflective method is not, or need not
> be, pragmatic in the sense of supposing, as current pragmatism sometimes seems to do,
> that the categories of biology and psychophysics have some peculiar advantage for the
> interpretation of the practical attitudes of thought. (ibid., 34-35).

It is difficult to avoid the supposition that the 'current pragmatism' to which Lewis alludes here is that of Dewey, whose *Experience and Nature* was first published four years before *Mind and the World Order.* Though Lewis agrees with Dewey that epistemology should be responsive to the sciences of the day, he strongly disagrees that biology and psychophysics have any specific priority, relative to the other sciences, for pragmatism.

Why does Lewis take this position, and why is it relevant to understanding Sellars' own relation to the history of pragmatism? To answer this I shall now turn to Lewis' pragmatic theory of concepts. In keeping with previous pragmatists, but with perhaps greater clarity and

attentiveness to the challenge posed by alternative conceptual frameworks in logic and in physics, Lewis emphasized the social nature of concepts:

> The coincidence of our fundamental criteria and principles is the combined result of the similarity of human animals, and of their primal interests, and the singularities of the experiences with which they have to deal. More explicitly, it represents one result of the interplay between these two; the coincidence of human modes of behavior, particularly when the interests which such behaviors serves involve coöperation (ibid., 20).

More bluntly: 'our categories are guides to action' (ibid., 21), and 'concepts and principles reveal themselves as instruments of interpretation; their meaning lies in the empirical consequences of the active attitude' (ibid., 31). This in turn licenses a version of verificationism about meaning:

> The concept is a definitive structure of meanings, which is what *would verify* completely the coincidence of two minds when they understood each other by the use of language. Such ideal community requires coincidence of a pattern of interrelated connotations, projected by and necessary to cooperative, purposeful behavior. … It is concepts … which must be implicitly present in our practice, which constitute the element of interpretation which underlies our common understanding of our common world. (ibid., 89)

In short, the function of conceptual meaning is to enable the coincidence of two (or more) minds that allows for cooperative behavior.[5] Notice that although Lewis upholds verification

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[5] Dewey also underscored the social cooperative function of language; see *Experience and Nature* (LW 1). The difference is that Lewis sees no need to ground the social cooperative function of linguistic exchange in a naturalized anthropology informed by ecology and evolutionary theory.

about conceptual meaning, the verification lies in diachronic *patterns of behavior* and not (as for some logical positivists) in synchronic presentations of sense-data.

Concepts must be public, Lewis thinks, because what is available to anyone through introspective awareness is just sensation and imagery. Since I cannot guarantee that my sensations and images are identical to those of another, it would be a triumph for skepticism if concepts were reducible to private mental phenomena. To account for conceptually structured discourse, Lewis explains concepts in terms of patterns of cooperative behavior rather than in terms of introspectively accessible mental phenomena. Though he admits that no individual mind would find concepts meaningful if they could not be associated with sensations and images (ibid., 77), the meaning of the concepts themselves is not constituted by those introspectively available associations but by patterns of cooperative, purposive behavior.[6]

Throughout *MWO* Lewis rightly stresses the anticipatory character of knowledge: the function of concepts and categories is to anticipate future experiences and to prepare us to meet them. In this regard Lewis builds on the pragmatist theory of concepts developed by Peirce and above all by Royce.[7] Yet he also does not think that the natural sciences have any specific relevance to epistemology; on the contrary, the reflective attitude undertaken by the pragmatist philosopher is wholly independent of all scientific theories. As Lewis sees it, while it certainly falls under the purview of science to determine the *ratio essendi* of things, it would be a mistake to conflate this project with the explication of the *ratio cognoscendi*:

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[6] For the importance of cooperation for conceptual meaning, compare: 'We have a common reality because – or in so far as – we are able to identity, each in his own experience, those systems of orderly relation indicated by behavior, and particularly by that part of behavior which serves the ends of cooperation. What this primarily requires is that, in general, we be able to discriminate and relate as others do, when confronted by the same situation' (ibid., 110-111) and 'both our common concepts and our common reality are in part a social achievement, directed by the community of needs and interests and fostered in the interest of communication' (ibid., 116).

[7] As Zack points out, Lewis is best understood as giving Roycean idealism an empiricist twist (Zack 2006, 33).

> Epistemological investigation is, naturally, by way of the *ratio cognoscendi*: that is its
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> peculiar task. Those 'theories of knowledge' which reverse the direction of explanation
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> and give a causal, natural-scientific account, merely substitute a more or less uncritical
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> and psychological methodology, based upon dubious assumptions, for their proper
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> business. (ibid., 426)

Since the *ratio essendi* and *ratio cognoscendi* must be distinguished, then although science may

have some privileged status with regard to the latter, it falls to philosophy alone to investigate

the former.[8] Though they will hopefully converge at the Peircean limit, for the here-and-now

the intellectual vocations of philosophy and science are distinct. Thus Lewis' conceptualistic

pragmatism is restricted to the explication of the *ratio cognoscendi*. The *ratio essendi* or order

of being has nothing to do with it; nothing in biology or any other science is relevant to

conceptualistic pragmatism. By contrast, Dewey's own pragmatism is grounded in the

organism-environment transaction; it is not much exaggeration to say that for Dewey,

pragmatism is what philosophy ought to become *in response to* Darwinism (Popp 2007; Rogers

2008). Such a thought could not be further from Lewis' Kantian pragmatism.

Sellars' Distinction Between Signifying and Picturing

Despite his ongoing criticisms of Lewis (and, following Lewis' death, Firth), Sellars

expressed an infrequent but consistent admiration for classical pragmatism; consider the

following selected texts:

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[8] Lewis was aware that this distinction depended on the analytic/synthetic distinction, which in turn depended on taking intensional semantics for natural and formal languages. If one were to insist on extensionalism, there would be no justification for the analytic/synthetic distinction and ultimately no justification for distinguishing epistemology from psychology – exactly as we see in Lewis' renegade student W. V. O. Quine. For Lewis' relation to Quine, see Sinclair (2012); see also Misak (2013).

1. Now I would argue that Pragmatism, with its stress on language (or the conceptual) as an instrument, has had hold of a most important insight – an insight which, however, the pragmatist has tended to misconceive as an *analysis* of 'means' and 'is true.' On the other hand, if the pragmatist's claim is reformulated as the thesis that the language we use has a much more intimate connection with conduct than we have yet suggested, and that this connection is intrinsic to its structure as language, rather than a 'use' to which it 'happens' to be put, then *Pragmatism assumes its proper stature as a revolutionary step in Western philosophy*. (SRLG §33-34*; emphasis mine)*[9]

2. It wasn't until my thought began to crystallize that I really encountered Dewey and began to study him. … He caught me at a time when I was moving away from 'the Myth of the Given' (antecedent reality?) and rediscovering the coherence theory of meaning. Thus it was Dewey's Idealistic background which intrigued me the most. I found similar themes in Royce and later in Peirce. *I was astonished at what I had missed*. (NAO, 1; emphasis mine).

3. Unless I am very much mistaken, the argument of this chapter [Chapter V – CS] also provides that missing ingredient, the absence of which from Peirce's account of truth leaves the 'would-be' acceptance 'in the long run' of propositions by the scientific community without an intelligible foundation; a fact which has obscured the extent to which this gifted composer of variations on Kantian themes *succeeded in giving metaphysics a truly scientific turn*. (SM, vii; emphasis mine)

These texts show that Sellars' interest in pragmatism is not incidental to the larger strokes of his thought. At present I am most interested in Sellars' suggestion that Peirce *really had succeeded*

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[9] I will not address whether the misunderstanding that Sellars attributes to pragmatism here is a correct understanding of pragmatism.

in the Kantian aim of giving metaphysics a truly scientific turn, but that his accomplishment was marred by the absence of a concept that Sellars undertook to provide. The concept is what Sellars, borrowing the term from the early Wittgenstein, calls 'picturing', which must be sharply distinguished from what Sellars calls 'signifying' or 'semantic assertability'.

Unfortunately, Sellarsian picturing is a difficult notion, and it is unsurprising that Rorty objected to it. Nevertheless, I shall attempt to show that picturing, correctly understood, is not (*pace* Rorty) a detraction from Sellars' pragmatist credentials but a vital component of them. Put most generally, picturing is the ability to reliably track and respond to causal regularities in the environment. As such it is distinguished from what Sellars calls 'signifying', or the ability to engage in intentional discourse and discursively structured thought. Sellars' relation to the history of pragmatism can be most clearly seen if we see him as aligned with Dewey with regards to picturing and with Lewis with regards to signifying.

Sellars introduces the signifying/picturing distinction in his 1960 'Being and Being Known' (BBK) by distinguishing between two ways of talking about the mind-world relation:

> there is an isomorphism in the real order between the developed intellect and the world, an isomorphism which is a necessary condition of the intellect's intentionality as signifying the real order, but is to be sharply distinguished from the latter … a confusion between *signifying* and *picturing* is the root of the idea that the intellect as *signifying* the world is the intellect as informed in a unique (or immaterial) way by the natures of things in the real order. (BBK, 50; emphasis original)

While there is something right about traditional philosophical conceptions of mindedness, nevertheless crucial distinctions must be made to understand the place of mind both *in* nature and as a *part of* nature. We need to understand what mindedness is not just 'in the order of

understanding' – the *ratio cognoscendi* of C. I. Lewis – but also what it is 'in the order of being' – the *ratio essendi* that Lewis neglects.

To understand the problem of mindedness as a part of nature, Sellars asks us to imagine a highly sophisticated robot:

> Suppose such an anthropoid robot to be 'wired' in such a way that it emits high frequency radiation which is reflected back in ways which project the structure of its environment (and its 'body'). … Suppose such a robot to wander around the world, scanning its environment, recording its 'observations', enriching its tape with deductive and inductive 'inferences' from its 'observations' and guiding its 'conduct' by 'practical syllogisms' which apply its wired-in 'resolutions' to the circumstances in which it 'finds itself'. It achieves an ever more adequate adjustment to its environment, and if we permitted ourselves to talk about it in human terms (ad we have been) we would say that it *finds out* more and more about the world, that it *knows* more and more *facts* about what took place and where it took place, some of which it *observed*, while *inferred* others from what did *observe* by the use of *inductive generalization* and *deductive reasoning*. (ibid., 52-53; emphasis original)

The analogy is not perfect; the robot is not *literally* carrying out observations and inferences, partly because it lacks sensations or sensory consciousness, but also because the robot is entirely 'mechanistic'; it cannot hold itself accountable to the kinds of norms that govern *our* perception, reasoning, and action.

Despite this, the analogy suggests that just as there are patterns of interaction through which the robot can navigate its environment with increasing skill, an ability that can be explained in terms of how the robot represents its environment, so too our own intentionality has a

'mechanistic' explanation. How the intellect tracks the world can explained in terms of the causal relationship between computational functions and environmental features. The robot need only be equipped with a rudimentary system for detecting features of its environment and responding to that detection by modifying its own states, where the modification of the inner states produces changes in behavior. If it can do this, then it has everything it needs in order to count as *representing* the regularities it 'observes'; hence the robot can implement activity recognizable to us as functionally analogous to our own cognitive activity.

Thus even though the intellect initially encounters itself as *signifying* or as *discursively structured*, that fact has little relevance for explaining how the intellect relates to the world *in rerum natura*. Minded animals, including ourselves, are not fundamentally different from a robot that 'comes to contain an increasingly adequate and detailed *picture* of its environment in a sense of picture which is to be explained in terms of the logic of relations' (ibid., 53; emphasis original). To understand how this matters to human activity, we need only consider what the nascent cognitive sciences tell us about how brains process information: 'I submit that as belonging to the real order it [the intellect – CS] is the central nervous system, and that recent cybernetic theory throws light on the way in which cerebral patterns and dispositions picture the world … what we know *directly* as *thoughts* in terms of *analogical* concepts may *in propria persona* be neurophysiological states' (ibid., 59; emphasis original). Picturing thus turns out to be a crucial part of the Sellarsian account of mind. If (as Sellars argues at length elsewhere) semantic notions such as 'means' or 'refers to' are strictly metalinguistic concepts that serve to indicate how a piece of language functions, then our best explanation of the relation between

language and the world will be the work of cognitive neuroscience, not semantics or

epistemology.[10]

Yet Sellars, like Lewis, is a social pragmatist about intentionality and conceptual meaning.[11]

For that very reason he realizes that the question of how the intellect relates to the world cannot

be understood in terms of intentionality: if intentionality is a socio-linguistic affair, then how

the intellect is related to the world is distinct from intentionality. We need a different kind of

relation – an empirical relation between two relational systems in the natural world– to account

for how the intellect relates to the world. We need picturing in the comprehensive account of the

place of mind in the natural world precisely because intentionality is not a relation – that is, not

a relation between mind and world.[12] Put otherwise: given that the intellect is related to the

world at all (which only a skeptic or solipsist would genuinely doubt), can the true nature of that

relation be ascertained solely by reflecting on the manifest image? The Great Minds of

'Western' philosophy, from Plato to C. I. Lewis, would not hesitate to say 'yes'.

Sellars objects to this venerable verity because the manifest image cannot explain itself

without succumbing to the Myth of the Given. Though Sellars is sufficiently faithful to

Aristotle, Kant, and C. I, Lewis (not to mention Strawson and Austin) to think that the manifest

image explicates the world as we experience it, the manifest image cannot *explain* itself. We

cannot look to the manifest image to understand *why* we happen to have the kind of manifest

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[10] Cf 'Truth, we have seen, is not a relation. Picturing, on the other hand, is a relation, indeed, a relation between two relational systems. And pictures, like maps, can be more or less adequate … the concept of a linguistic or conceptual picture requires that the picture be brought about by the objects pictured; and while bringing about of linguistic pictures could be 'mechanical' (thus in the case of sophisticated robots), in the thinking of pictures as correct or incorrect we are thinking of the uniformities involved as directly or indirectly subject to rules of criticism' (SM, 135-136) and 'Picturing is a complex matter-of-factual relation and, as such, belongs in quite a different box from the concepts of denotation and truth' (ibid., 136).

[11] In Haugeland's colorful metaphor, both Lewis and Sellars are on 'third base' about intentionality; see Haugeland 1998.

[12] Or, if McDowell is correct and intentionality *is* a relation, then we do not need picturing; see McDowell 2009.

image that we do. And yet this problem must arise for any philosopher who acknowledges – as Lewis did but Aristotle and Kant did *not* – that it is a *contingent* fact of history that we do have the kind of manifest image that we do.[13] The actuality of our contingent manifest image is an empirical fact to be explained. In this regard Sellars continues the Deweyan tradition of reflecting on the influence of Darwinism for philosophy. Since we must turn to scientific explanation to understand why we have the manifest image that we do, epistemology must incorporate the insights of evolutionary theory and cognitive science.

To better situate Sellars' philosophy of mind relative to the pragmatist tradition, we need to examine more closely the function of picturing: what is picturing *for*? Sellars suggests that we understand picturing in terms of the organism-environment relationship. Varying metaphors from picturing to mapping, Sellars observes that 'the essential feature of the functioning of a map *as*, in a primary sense, a map is its location in the conceptual space of practical reasoning concerning getting around in an environment' (NAO, 109).[14] This is, as I see it, crucial for understanding the affinity between Sellars and Dewey: the essential function of cognition *in rerum natura* is to guide purposive activity in response to detectable regularities. It is deeply unfortunate that Sellars' choice of terminology, borrowed from the *Tractatus*, obscured the pragmatist dimension of Sellars' thought, and produced the impression that we would have a more thoroughgoing pragmatism if picturing were abandoned. *Pace* Rorty, a pragmatist theory of cognition as picturing is precisely what we need in a comprehensive account of mindedness once we accept a social pragmatist account of intentionality per se.

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[13] By contrast, Hegel acknowledges that it is a fact of history that we have the kind of manifest image that we do, but it is not a contingent fact.

[14] Cf 'since agency, to be effective, involves having reliable cognitive maps of ourselves and our environment, the concept of effective agency involves that of our IPM judgments [Introspection, Perception, and Memory – CS] being likely to be true, that is, to be correct mappings of ourselves and our circumstances' (MGEC, 190). In a footnote, Sellars adds, 'May I call them pictures?'

Making Picturing Even More Pragmatic

I now undertake a brief examination of how picturing has been interpreted by three contemporary philosophers: Jay Rosenberg, Johanna Seibt, and Huw Price. Bringing them together shows how powerful picturing can be as an explanatory concept in philosophy of mind and why it is concept that pragmatists should re-examine. I will first turn to Rosenberg's explanation of the epistemological status of the concept of picturing, followed by Seibt's interpretation of picturing in terms of nonlinear dynamics, and concluding with Price's use of picturing in relation to pragmatist philosophy of language and metaphysics.

Recall that Rorty's rejection of picturing, noted at the beginning, was aimed at Rosenberg's (1974) defense of picturing, which Rosenberg subsequently rejected (1980). Much later, and shortly before his passing, Rosenberg (2006) revised his assessment by drawing on Sellars' late work.[15] Rosenberg notes that, for Sellars, 'picturing is evidently the fundamental mode of correctness for *any* matter-of-factual representational system … a useful strategy might be to begin by considering his account of representational systems (RSs) too basic for the atomic-vs-molecular distinction to get a foothold in the first place, i.e. *animal* RSs' (108). In putting the point this way, Rosenberg stresses what Sellars means by an 'animal representational system': 'To be a representational state, a state of an organism must be the manifestation of a system of disposition and propensities by virtue of which the organism constructs *maps* of itself in its environment, and locates itself and its behavior on the map' (MEV, 292). For animal RSs do (and indeed must) picture; to be an ARS is to be, put formally, an embodied and embedded

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[15] In particular MEV; but see also Sellars' 'Behaviorism, Language, and Meaning' (1980) for a closely related argument as to why methodological behaviorists should not eschew talk of representations.

picturing relation, since it must picture both itself – that is, its body – as well as the environment in which it is embedded. Rosenberg thus realizes that picturing must as fully embodied and embedded as any philosophy of mind beholden to Heidegger or Merleau-Ponty.

To clarify how pictures can represent, Rosenberg stresses how they are analogous to language: 'a state will count as representational just in case – and *because* – it is suitably implicated in analogous to our language-entries, language-exits, and intra-linguistic moves' (Rosenberg 2009, 108). To be a representation is to be a state with a functional role in a system that must systematically coordinate how the environment impinges on the system with how the system should respond to the environment. An ARS does so by enabling primitive inferences by which of which it is able to track both its environment and also itself in relation to its environment. Thus while we must not attribute full-blown first-person perspectives to non-discursive animals, nevertheless 'Sellars explicitly makes *some* sort of self-awareness an indispensable condition of an animals RS' (ibid., 109). This requires only that some sub-animal cognitive module have the function of tracking the temporal and spatial location of the animal's body relative to the features of the environment that are relevant to satisfying or thwarting the animal's goals. (For example, if some module or modules were dedicated to comparing information about perceptual changes correlated with proprioceptive information with information about perceptual changes that was not correlated with proprioceptive information.)

How, then, should an animal's cognitive experience of its world be described in terms of picturing? On Rosenberg's suggestion, we should understand

an animal's total *visual field* at a given time as a single composite state functioning as a *'pictorially' complex representation of its then and there visual environment*. Insofar as they are appropriately caught up in dispositions to (primitive) inferences and behavior,

such sensory states function as highly complex Jumblese-style sentences. To put the point

metaphorically, the world 'speaks' to organisms through their senses. (ibid., 113;

emphasis original)[16]

It should be emphasized that an animal's pictorial representation of its then-and-there

environment is rarely restricted to a single sensory modality (e.g. vision), since it integrates

multi-modal sensory information and proprioceptive information to form a highly complex

map-like representation of the environment and the animal's situation relative to that situation.

Put otherwise, the picturing relation is the cognitive dimension of the organism-environment

transaction so important to Dewey.

Importantly, Rosenberg now sees that picturing has (*contra* Rorty) no epistemological role:

the strategy which I have here pursued divests picturing of immediate epistemological

significance by interpreting it as a functional mode of representation, rather than as a

mode of correctness. Being in the 'picturing line of work' is the determinative function of

matter-of-factual representational systems *per se*, and so, *trivially*, the correctness of a

basic matter-of-factual representation will be its correctness as a picture – but, crucially,

the priority expressed here is conceptual and *not* epistemological. (126; emphasis

original)

Rather than think of picturing as an epistemological concept that plays a directly

epistemological role, e.g. in terms of justification, we should think of picturing as playing an

indirect role that respects the autonomy of epistemology while also doing something that

epistemology alone cannot do: explain why we have the kinds of cognitive capacities and

incapacities that we presume ourselves to have when we are doing epistemology. In short, the

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[16] 'Jumblese" is a term Sellars coins for a language without terms for the predicate relation, in order to highlight the
degree to which predication is dispensable.

conceptual status of picturing does not belong to epistemic justification (hence respecting the autonomy of epistemology) but to empirical explanation. For this reason, Rorty is mistaken to remark that 'Perhaps the gods see things otherwise. Perhaps they are amused by seeing us predicting better and better while picturing worse and worse' (Rorty 1991, 155). Picturing is not a substitute for a God's-eye view, but a speculative anticipation of an empirical theory of human and nonhuman cognition.

Whereas Rosenberg clarifies the conceptual status of picturing, Seibt (2009) clarifies its ontological role by embedding the idea of picturing within a scientific process metaphysics. Although Sellars has mostly been influential on 'the "social pragmatist movement" focused on the normative domain in the light of reason, leaving the causal issues to the purview of neuroscientists or behaviorists' (Seibt 2009, 249), this is at best half of the Sellarsian story. The other half, which concerns what social pragmatists happily leave to neuroscientists, is of profound importance for understanding mindedness. Seibt points out that if we think about picturing in strictly Tractarian terms, we will go awry: 'picturing is not an abstract relation but a certain type of nonlinear causal processing' (ibid., 249). This may seem like a bold claim, since there is nothing about 'nonlinear causal processing' in anything Sellars wrote. Yet Seibt argues that we can, armed with important discoveries in complexity theory, understand Sellars far better than he understood himself. The result is that we can come to see that

> [p]icturing is a relationship of causally founded coordination between two concrete
> collections of natural items. Items in one of these collections, so-called 'natural linguistic
> objects,' fulfill two additional constraints: first, these items must lend themselves to use
> as material embodiments of the 'elementary' (empirical) statements of a language game

L; second, they must exhibit the kind of uniformities that are produced once that game is

played. (ibid., 252)

Though this is helpful, there is a problem with assimilating all picturing representations to the

non-semantic (picturing) functions of linguistic representations. This obscures both (1) how

picturing functions in cognitive processes *generally* and (2) how the advent of language

transforms how the cognitive systems can picture their environments. Although Seibt allows

that natural-linguistic objects may be 'rhythmic patterns of an acoustic code, machine states of a

Turing machine, or neurophysiological states' (ibid., 253), nevertheless machine codes and

neurophysiological states *cannot be* 'functional analogues of the observation statements of some

natural language' (ibid.).

Rather, we need to understand how such systems represent their environments, as required

by our theories of computation and neurophysiology. There may be good empirical reasons to

think that cognitive systems do represent features of their environments, but also there is no *a

priori* reason to think that languages themselves are best understood in terms of such

representations. We may yet conclude that social pragmatists are correct about the uselessness

of the concept of representation for semantics of natural languages, and yet *also* conclude that

the concept of representation is useful for cognitive neuroscience. Sellars' distinction between

signifying and picturing opens up the conceptual space for precisely this possibility.

However, the social pragmatist theory of intentionality has also obscured a correct

understanding of picturing. If the role of socio-linguistic norms is to institute inferential content,

as argued at length by Brandom (1994; 2000), then how can there be picturing or mapping

representations? How can there be representations that are non-linguistic and yet function as

representations, which includes the possibility of misrepresentation? Picturing requires norms of

correct and incorrect representation which cannot be socio-linguistic, since they characterize cognition in non-linguistic animals. Seibt attempts to solve this problem by distinguishing picturing and signifying in terms of 'low-grade' and 'high-grade' normativity: the low-grade normativity of biological functions and the high-grade normativity of socio-linguistic deontic scorekeeping.[17]

Though I agree with Seibt that biological phenomena (including cognition) display a kind of normativity, 'grades' of normativity problematically suggests that linguistic thought has much more of what biological functions have generally. Seibt's view can be usefully contrasted here with Rouse's (2015) distinction between *dimensions* of normativity. On Rouse's view, the emergence and acquisition of conceptually articulated understanding introduces a novel dimension of normativity distinct from, but *not* 'better' or 'worse' than, the *teleological* normativity of living animals in their environments.[18] Yet Seibt correctly sees the need for a theoretical account of what is happening at the level of cognition and not just behavior. Though Rouse does not ignore cognitive science, the anti-representationalists he cites cohere with his broader theoretical orientation informed by Heidegger and Gibson.

It is time to stop worrying that any talk of 'representation' implicates one in 'Cartesian cognitive science' (Wheeler 2005), as if merely saying the word requires thinking about representations as static symbols manipulated according to strict rules or as intentional icons directly accessible to consciousness. But if the meaning of a word consists of its use, then what the word 'representation' means depends on how it is used. Sellars' driving intuition is that the basic function of representations *is* to orient, to allow an animal to navigate its environment. A theory of how animals navigate their environments requires positing something internal to the

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[17] See also Seibt (2016) on a 'normativity gradient'.
[18] See also Okrent (2007) for the vindication of teleological normativity that Rouse uses.

brain, and there is no reason why the word 'representation' cannot do that job.[19] Moreover, representations need not be linguistic; a secure grasp on Sellars' distinction between signifying and picturing allows us to inquire into what non-linguistic representations might be.[20]

That aside, Seibt helpfully points out that 'orientation systems might be embodied in material objects that differ in structure and complexity radically from sentences in natural or programming languages' (ibid., 258). The complexity of an orientation system depends on the different degrees and kinds of causal regularities that the system can reliably track. This kind of normativity is cognitive, physiological, and ecological: 'world-coordinatedness is the evolutionary condition for the possibility of a certain class of natural items that would not exist if they were not involved in normative functioning: that world-coordinatedness and the specific normative functioning of 'natural-(pre)-linguistic' objects are selected for in combination' (ibid., 271). In other words, a genuine explanation of cognition *in rerum natura* requires that we understand cognition just as we understand all biological functions: in terms of the ecological functions of cognitive systems and the evolutionary history of eco-cognitive coupled dynamics. By placing more emphasis on ecology and evolution that Sellars did, and makes use of theoretical tools that were unavailable to Sellars (such as complexity theory and nonlinear dynamics), Seibt advances our understanding of what picturing should mean.

In contrast with Rosenberg and Seibt, Huw Price rehabilitates the picturing/signifying distinction through a critique of philosophy of language and analytic metaphysics.[21] The central target of that critique is 'Representationalism', understood as the idea that 'the function of

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[19] Interestingly, Rorty's objections to representationalism in epistemology did not extend to representationalism in cognitive science (Rorty 1979b, 244-256).

[20] For cognitive representations as basically map-like, see Camp 2007; see also Huebner 2011 for why complex mental representations in nonhuman animals do not involve attributing propositional contents to them.

[21] For an earlier version of that critique, see Price 2011 in which he argues that analytic metaphysics never adequately came to terms with Carnap's critique of metaphysics.

statements is to 'represent' worldly states of affairs and that true statements succeed in doing so' (Price 2013, 24). To be Representationalist is to think that the proper function of assertoric discourse is to track how the world is. An assertion is true if it succeeds in doing so, false if it does not. Thus Representationalists must distinguish between genuinely world-tracking discourse and other forms of discourse which are not *genuinely* world-tracking (even if they appear to be). Price's strategy is to replace this bifurcation with what he calls 'the new bifurcation thesis': that there are two different concepts of representation which do not even belong to the same logical category.

The distinction he urges is between 'e-representations' ('e' for environmental and external) and 'i-representations' ('i' for inferential and internal") (ibid., 36). E-representations are states of a dedicated system or sub-system that systematically co-vary with states of the environment in which that system is embedded. By contrast, i-representations are nodes in an inferential nexus – that is, propositional *content*. Distinguishing between these two different concepts of representation entails that our talk about truth and reference – our semantic metavocabulary –is not going to establish *one way or the other* how our discourse is related to the world (ibid., 37).

The i-representation/e-representation distinction means we can prise apart 'the content assumption' and 'the correspondence assumption.' According to the content assumption, 'language is a medium for encoding and passing around sentence-sized packets of factual information – the *content* of beliefs and desires' (ibid., 40). By contrast, the correspondence assumption holds that 'these packets of information are all "about" some aspect of the external world, in much the same way' (ibid.). Once we separate these two assumptions, we realize that 'there is no requirement whatsoever that each node [in an inferential nexus – CS] have an e-representational role, where the correspondence assumption would have some traction" (ibid.).

On Price's view, there are many kinds of discourse (e.g. empirical, mathematical, modal, semantic, ethical), all of which contain assertions and other speech acts. Those assertions form the content of beliefs and desires relative to that kind or dimension of discourse. *Qua* assertions, an assertion made in ethical discourse is neither more nor less of an assertion than an assertion in mathematical discourse. However, 'while all assertoric vocabularies are *i-representational*, some may be much more *e-representational* than others' (ibid., 153); not all assertoric discourses reliably track features of the environment, or do so equally well.

Price happily recognizes that the new bifurcation thesis is close to Sellars' distinction between picturing and signifying (ibid., 166-167), with signifying (what Sellars eventually comes to call semantic assertability or S-assertability) being an important kind of i-representation and picturing being an attempt to specify a kind of e-representation. However, Sellars' view is also broader because, as stressed above, he does not restrict picturing items to languages. Although picturing may suggest familiar worries about propositional content, mapping does not; maps are not sentences. Once we understand that Sellars' basic point is that cognitive activity *in rerum natura* essentially involves mapping or map-like relations between states of some information-processing subsystem (the brain of an animal or the CPU of a robot) and detectable regularities in its environment, picturing items need not be linguistic. Sellars emphasizes linguistic objects only because language is essential to the uniquely human mode of picturing, not because only languages picture. This means that Sellars' view, unlike Price's, cannot be restricted to a naturalized anthropology but must be grounded, as Dewey's was, in an ecologically embedded theory of cognitive activity.

Regardless of how far we go in using cognitive science to flesh out picturing, the new bifurcation thesis nevertheless allows us 'abandon the presupposition at the core of orthodox

naturalistic Representationalism, that *propositional content* and *word-natural-world correspondence* live in the same box' (ibid., 170). Propositional content or i-representation is a legitimate use of the concept of representation, perfectly useful (or not) for semantical analysis. By contrast, when we talk about representations as reliably tracking features of the environment, we not even talking about the same thing.

In responding to Brandom, Price admits that his distinctions are quite nuanced, and yet defends them: 'But these distinctions are a necessary part of the nuance, in my view. In so far as neither Brandom nor Rorty seems sufficiently sensitive to them, I may be closer to Sellars than either of them' (ibid., 194). The nuanced distinction is simply this: we can reject Representationalism (as pragmatists like Dewey, Wittgenstein, and Rorty have long urged) without giving up on all talk of representations. The signifying/picturing distinction allows us to distinguish the concept of representation that satisfies the content assumption (signifying or i-representations) and the concept of representation that satisfied the correspondence assumption (picturing or e-representations). Put in those terms, Price shows how Sellars' signifying/picturing distinction can resolve live issues in philosophy of language and analytic metaphysics.[22]

Pragmatism Today and the Cognition/Discourse Distinction

We can now integrate Price, Seibt, and Rosenberg in the following thought: that Sellars' signifying/picturing distinction is best understood as a distinction between *cognition* and *discourse* – a distinction unfortunately elided by all traditional talk about 'the mind' or 'the

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[22] It is a further question whether Sellars' scientific realism and process metaphysics is compatible with Price's neopragmatist suggestion that we should develop a naturalism without metaphysics. See Knowles (2014) for a suggestive extension of Price's naturalism that invites comparison with Seibt's Sellarsian process metaphysics

intellect'. The former is about how biological cognitive systems, including but not limited to neural computations, process information in order to reliably track (or map) salient patterns in their environments (both physical and, when relevant, social). The latter is about how persons exchange inferentially articulated propositional contents through assertions and other speech acts in a game of giving and asking for reasons in order to facilitate successful cooperative behaviors.[23]

Though we should be pragmatists about both cognition and discourse, it would be a disaster to conflate them. If we were to conflate cognition and discourse, every concept with an established use in some dimension of discourse would have to refer to some actual or possible entity, just as cognitive representations (such as those of the robot in BBK) that guide sensorimotor ability reliably track relatively stable features of the environment. The consequence is thus the inflationary ontologies of Western metaphysics prior to, and thence in reaction to, the rise of modern science. By contrast, if our metaphysics is to be constrained by the posits licensed by our best scientific theories, then we must distinguish between the assertions and other speech acts whereby we navigate the polydimensional space of reasons and the map-like neurocomputational representations whereby we navigate our physical and social environments. In short, there is what our discourse is *about*, and there is how that discourse is *related to the world*. Conversely, if all assertoric discourse were, as such, a way of reliably tracking salient patterns and processes, such that all semantic content stood in a correspondence relation to some kind of object or relation, then our explication of mathematical, modal, and

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[23] I emphasize 'assertions and other speech acts' because there cannot be an exclusively assertoric discourse – a discourse that consisted of third-person speech acts and no first-person or second-person speech acts. See Kukla and Lance (2009) on how to avoid what they call 'the declarative fallacy'.

moral assertoric discourse would not be able to avoid the intractable mysteries of Plato or Meinong.

We can finally return to our initial project of understanding Sellars in relation to the pragmatist tradition. His distinction between signifying and picturing, which I suggest is best understood as a distinction between discourse and cognition, is an attempt to synthesize Lewis' pragmatist but anti-psychologistic and anti-naturalistic theory of conceptual meaning with Dewey's pragmatic naturalistic approach to intelligent behavior. With Lewis, Sellars affirms the fundamentally social character of the inferentially articulated concepts as manifest in discursive practices. With Dewey, Sellars affirms the fundamentally ecological character of the anticipatory representings that allow organisms to reliably track and respond to the causal regularities in their physical and social environments. [24] Sellars shares both Lewis' keen interest in pluralism of conceptual frameworks and their fundamentally normative dimension and Dewey's interest in the relevance of biology and psychology for epistemology and philosophy of mind. We pragmatists should find in Sellars' work, and especially his distinction between cognition and discourse, the tools necessary for pragmatism to be understood, as Sellars himself understood it, as a truly revolutionary step in Western philosophy.[25]

Works Cited

Bernstein, Richard. *The Pragmatic Turn*. Malden: Polity Press, 2010.

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[24] This is not to understate the crucial differences between Dewey and Sellars. Sellars has, despite his ardent naturalism, rather little by way of concrete biology; he thinks about cognition *qua* picturing largely in computational or cybernetic terms. By contrast, Dewey emphasizes organisms, habits, and feelings. Whether Sellars and Dewey can be completely reconciled remains to be seen.

[25] I would like to thank Bryce Huebner, Steve Levine, and Peter Olen for helpful criticisms on a previous draft.

Forthcoming: *Sellars and the History of Philosophy* (ed. Corti and Nunziante, Routledge 2018)

Brandom, Robert. *Making It Explicit: Reasoning, Representing, and Discursive Commitment.* Cambridge: Harvard University Press, 1994.

Brandom, *Articulating Reasons: An Introduction to Inferentialism*. Cambridge: Harvard University Press, 2000.

Camp, Elizabeth. "Thinking With Maps." *Philosophical Perspectives, 21, Philosophy of Mind* (2007): 145-182.

Dewey, John. "The Influence of Darwinism on Philosophy" in *The Middle Works of John Dewey, Volume 4: 1907-1909*, edited by Jo Ann Boydston, 1-14. Carbondale: Southern Illinois University Press, 1977.

--------. *Experience and Nature*. *The Later Works of John Dewey, 1925-1953, Volume 1: 1925*, edited by Jo Ann Boydston. Carbondale: Southern Illinois University Press, 1981

-------- *Logic: The Theory of Inquiry: The Later Works of John Dewey, 1925-1953, Volume 12: 1938*, edited by Jo Ann Boydston. Carbondale: Southern Illinois University Press, 1986.

Haugeland, John. "The Intentionality All-Stars" in *Having Thought: Essays in the Metaphysics of Mind*, pp. 127-170. Cambridge: Harvard University Press, 1998.

Hookway, Christopher. "Pragmatism and the Given: C. I. Lewis, Quine, and Peirce" in *The Oxford Handbook of American Pragmatism*, edited by Cheryl Misak, 269-89. New York: Oxford University Press, 2008.

Huebner, Bryce. "Minimal Minds" in *Oxford Handbook of Animal Ethics,* edited by Tom L. Beauchamp and R.G. Frey, 441-468. New York: Oxford University Press, 2014.

Knowles, Jonathan. "Naturalism without Metaphysics" in *Realism, Science, and Pragmatism*, edited by Kenneth Westphal, 200-218. New York: Routledge, 2014.

Kukla, Rebecca and Mark Lance. *'Yo!' and 'Lo!": The Pragmatic Topography of the Space of Reasons*. Cambridge: Harvard University Press, 2009.

Lewis, C. I. *Mind and World Order: Outline of a Theory of Knowledge*. New York: Dover Publications, 1929.

Lewis, C. I. "Review of *The Quest for Certainty*" in *The Collected Papers of C. I. Lewis*, edited by John D. Goheen and John L. Mothershead, Jr., pp. 66-77. Stanford: Stanford University Press, 1970.

McDowell, John. "Intentionality as a Relation" in *Having the World In View*, pp. 44-65. Cambridge: Harvard University Press.

Misak, Cheryl. *The American Pragmatists*. New York: Oxford University Press, 2013.

Okrent, Mark. *Rational Animals: The Teleological Roots of Intentionality*. Athens: Ohio University Press, 2007.

Forthcoming: *Sellars and the History of Philosophy* (ed. Corti and Nunziante, Routledge 2018)

Popp, Jerome. *Evolution's First Philosopher: John Dewey and the Continuity of Nature*. Albany: SUNY Press, 2007.

Price, Huw. 'Metaphysics After Carnap: The Ghost Who Walks?' in *Naturalism without Mirrors*, 280-303. New York: Oxford University Press, 2011.

---------------. *Expressivism, Pragmatism, and Representationalism*. New York: Cambridge University Press, 2013.

Rockwell, Teed. *Neither Brain Nor Ghost: A Nondualist Alternative to the Mind-Brain Identity Theory*. Cambridge: The MIT Press, 2005.

Rogers, Melvin. *The Undiscovered Dewey: Religion, Morality, and the Ethos of Democracy*. New York: Columbia University Press, 2008.

Rorty, Richard. 'Transcendental Arguments, Self-Reference, and Pragmatism' in *Transcendental Arguments and Science,* edited by Peter Bieri, Rolf Horstmann, and Lorenz Krüger, 77-103. Boston: D. Reidel Publishing Company, 1979a.

---------------. *Philosophy and the Mirror of Nature*. Princeton: Princeton University Press, 1979b.

--------------. 'Representation, social practices, and truth' in *Philosophical Papers 1: Objectivity, Relativism, and Truth*, 151-161. New York: Cambridge University Press, 1991.

----------------. 'Intellectual Autobiography' in *The Philosophy of Richard Rorty*, edited by Randall Auxier and Lewis Hahn, 3-24. Chicago: Open Court Publishing, 2010.

Rosenberg, Jay. *Linguistic Representation*. Dordrecht: D. Reidel Publishing, 1974.

-------------------. *One World And Our Knowledge of It: The Problem of Realism in Post-Kantian Perspective*. Boston: D. Reidel Publishing Company, 1980.

------------------. "Sellarsian Picturing" in *Wilfrid Sellars: Fusing the Images*, pp. 104-126. New York: Oxford University Press.

Rouse, Joseph. *Articulating the World: Conceptual Understanding and the Scientific Image*. Chicago: The University of Chicago Press, 2015.

Sachs, Carl. *Intentionality and the Myths of the Given*. New York: Routledge, 2014.

Seibt, Johanna. "Functions Between Reasons and Causes: On Picturing" in *Empiricism, Perceptual Knowledge, Normativity, and Realism*, edited by Willem deVries, 247-281.

----------------. "How to Naturalize Sensory Consciousness and Intentionality within a Process Monism with a Normativity Gradient: A Reading of Sellars" in *Sellars and His Legacy*, edited by James R. O'Shea, pp. 186-222. New York: Oxford University Press.

Sellars, Wilfrid. "Being and Being Known" in *Science, Perception, and Reality*, 41-59. Atascadero: Ridgeview Publishing Company, 1963.

Forthcoming: *Sellars and the History of Philosophy* (ed. Corti and Nunziante, Routledge 2018)

--------------------. "Some Reflections on Language Games" in *Science, Perception, and Reality*, 321-358. Atascadero: Ridgeview Publishing Company, 1963.

------------------. *Science and Metaphysics.* Atascadero: Ridgeview Publishing Company, 1967.

-----------------. *Naturalism and Ontology*. Atascadero: Ridgeview Publishing Company, 1979

-----------------. "Autobiographical Reflections" in *Action, Knowledge, and Reality,* edited by Hector-Neri Castañeda, pp. 277-293. Indianapolis: The Bobbs-Merrill Company, 1975.

-------------------. "More on Givenness and Explanatory Coherence" in *Perceptual Knowledge*, edited by Jonathan Dancy, pp. 177-191. New York: Oxford University Press, 1988.

------------------. "Mental Events" in *In The Space of Reasons*, edited by Kevin Scharp and Robert Brandom, pp. 282-300. Cambridge: Harvard University Press, 2007.

-------------------. "Behaviorism, Language, and Meaning". *Pacific Philosophical Quarterly* 60 (1980): 3-30.

Sinclair, Robert. "Quine and Conceptual Pragmatism." *Transactions of the Charles S. Peirce Society* 48, no. 3 (2012): 335-355

Wheeler, Michael. *Reconstructing the Cognitive World.* Cambridge: The MIT Press, 2005.

Zack, Naomi. "Murray Murphey's Work and C. I. Lewis's Epistemology: Problems with Realism and the Context of Logical Positivism". *Transactions of the Charles S. Peirce Society* 42, no. 1 (2006): 32-44.