

On Our Exosomatic Existence

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Robert E. Innis, *Pragmatism and the Forms of Sense: Language, Perception, Technics* (University Park, PA: The Pennsylvania State University Press, 2002. Pp, x + 265. ISBN 0-271-02223-X (cloth), \$52.00.

ABSTRACT Key Words: Michael Polanyi, classical pragmatism, technology, language, perception, the tacit dimension, aesthetics.

This is a critical review of Robert Innis' Pragmatism and the Forms of Sense: Language, Perception, Technic. In this book, one of Michael Polanyi's key preoccupations is related to the ideas of a number of thinkers, including Charles Peirce, John Dewey and Ernst Cassirer.

The “forms of sense” of Innis’s title are language and technology.¹ This means that language and technology are twin “weblike systems of *meaning-making* in which we dwell, into which we have extended ourselves, and upon which we must fatefully rely.” It also means that language and technology “shape, form and mold the very channels in which our body-based perceptual systems grow and develop”(4).

The articulation of this thesis begins with Michael Polanyi’s conception of a “tacit logic of consciousness” (22), in particular the paradigm of the “probe” (in the hands either of a blind man or of a dentist) which becomes a transparent medium, an “exosomatic organ,” through which skillful users extend the range, selectivity and discriminatory power of their senses. The probe illustrates Polanyi’s central contribution to the structure of consciousness, its “from-to” structure (5). Consciousness is not merely “about” something, aimed (intended) or directed toward its object; “we *attend from* (are subsidiarily aware of) a field of movements, visual particulars, symptoms, articulate clues while we *attend to* (are focally aware of) what they ‘mean’” (38). A probe, an object external to the body, becomes an exosomatic organ when it is used to attend “*from* the pressures and impacts made by the probe on our body *to* what these pressures and impacts *mean*” (39).

Technology is “rooted in the general human production of “exosomatic organs” of all types” (131) and language is best understood as part of this phenomenon of extending ourselves into a material practice (in this case the practice of making and responding to articulate sounds and physical inscriptions) until we dwell in and rely on the practice in such a way that it shapes, forms and molds our perceptions. On the strength of a sentence on page 7 of *The Tacit Dimension*—viz. “We can, accordingly interpret the use of tools, of probes and of pointers as further instances of the art of knowing, and may add to our list also the denotative use of language, as a kind of verbal pointing.”—Innis credits Polanyi with the insight that the probe may also serve as model of our use of language (49).

The “pragmatism” of Innis’s title is represented here mainly by Dewey, but also by an Italian, Giovanni Vailati, who came under the influence of the turn-of-the-century American movement and who died a year before William James. While James is mentioned only briefly on a handful of occasions, Innis devotes a chapter to Vailati’s “autonomous and original” (101) work on language—one of two chapters which develop the theme of language as a form of sense. The other is devoted to the convergent (51) work published in the 1930s by Karl Bühler and Alan Gardiner and to a late 19th century figure, Philipp Wegener, who influenced

both Bühler and Gardiner.² But it is Peirce who frames Innis's introductory chapter on the "perceptual roots of linguistic meaning" as well as his introduction of the key insights from Polanyi.

The lessons Polanyi extracted from the "tacit dimension" do indeed illuminate Peirce's semiotic approach to perception. Peirce's central idea is that all perceptual processes are sign processes, that is to say (non-deductive, ampliative) inferences with the "from-to" structure to which Polanyi called attention. There is no room in Peirce's theory for a "'reality' accessible outside the play of signs even on the perceptual level" (20) nor for bare (or simple) awareness of what is present. Perception is a complex incorporating what has already been undergone (poneception) and projecting an anticipation (anteception) (27).

This capacity to interpret what one is undergoing is available only to a creature that can form habits as modifications of its goal-oriented behavior, the same capacity that turns the pressures and impacts made by a probe on the organ of the body in contact with it into something that means something to the organism wielding the probe. Perception is focal awareness of an interpretant prompted by (inferred from) subsidiary awareness of how the body is being affected by aspects of its environment.

In animals and in significant parts of human experience, goal-oriented behavior³ is determined by natural teleology (the nature-given quest for nourishment, procreation, agreeable ambiance) and "inference" is spontaneous, not consciously controlled. This is where the experience of acquiring an exosomatic organ—whether it be a probe or spanner, a keyboard or a skateboard, a mechanical digger or a sailing dinghy—illuminates both what typifies a Peircean sign and the understanding this affords of the nature of perception. Once subsidiary attending has become second nature, its spontaneity may as well have been a product of one's first nature.

One can by extension include the experience of learning one's way around an unfamiliar neighborhood until at length one's awareness of locations has made them familiar by incorporating subsidiary awareness of their relations to other locations in the neighborhood. (Once it has become familiar a neighborhood may be thought of, perhaps, as an exoskeleton worn loosely.) Language, once acquired, likewise—but in a far more multivariant and pervasive way—spreads over experience subsidiary awareness of what situations and their constituents are called and of what, in being so-called, is entailed and excluded. Just as experienced mechanics looking at a piece of machinery see how parts should interact and see what tools are appropriate to gain access or make adjustments, language users looking at a situation see what will interest or concern to their fellow humans and what speech acts are appropriate to gain the cooperation of others in adjusting the situation to render it more suitable to human needs or tastes. The practices of communication develop perception—which is always of what things in, or aspects of, the environment mean—as readily as do the practices of dwelling in those exosomatic organs that we think of as the products of technology.

How far one should push, or rely on the guidance of, this analogy are questions worth raising. The resources for expanding our understanding of language, which Innis canvasses in the work of Bühler, Gardiner and Wegener, take full account, appropriately, of social situations in which language is used. But there is no suggestion in Innis's treatment that social interaction might itself need to be recognized as giving rise to a third form of sense alongside language and technology. Whether something is in the perceptual field of another as well as the intentions, needs or desires of another can be recognized without the mediation of language.

The use of language adds a significant layer of complexity to the perception of the social environment, but that environment is no more entirely the product of linguistic interaction than it is of technological mediation. Higher apes dwell in a rich social environment which is both technologically and linguistically impoverished by comparison with the human environment. Human social practices extend well beyond linguistic practices and arguably have the effects of “shap[ing], form[ing] and mold[ing] the very channels in which our body-based perceptual systems grow and develop” (4) that Innis attributes to language and technology.

All that may turn on this, of course, is how one reads the implicature of the definite article in Innis’s title: “the Forms of Sense”—*some* or *all* of the forms of sense? A more comprehensive treatment might need to deliver on a subtitle that reads, “Language, Technics, Social Interaction and Perception”

Innis is content in the first part of his book (“Framing Language”) and in much of the second (“The Senses of Technics”) to pursue what he characterizes (following Justus Buchler) as “a method of rotation, throw[ing] new light quite generally on how the forms of meaning-making consciousness define, as well as are defined by, a variety of linguistic and technological embodiments” (4). However, the second part of his book also includes a search for an appropriate framework for a critical project. After surveying a variety of criticisms of the effects of technology on our lives, Innis “frame[s] a set of problems” which calls for an inquiry into the appropriate “categories and methods” (137) to be used in evaluating what, given the impact technology has on our perceptual structures, recent technological transformations are doing to us. The categories and methods, Innis suggests, are to be found in the “pragmatist aesthetics” of Dewey’s *Art as Experience*.

The launch of this project, as well of the “rotation” of the meaning-making phenomena of technology, involves a return to Polanyi’s “conception of a ‘tacit logic’ of consciousness and the theory of meaning built on it” (137). This time Polanyi’s insight is considered in the context of Heidegger’s “fruitful analysis of an ‘implement’” (139), of Husserl’s “noetic-noematic [mode of attending—forms of appearance] correlations” (141) and of Dewey’s “pragmatist perspective” (142 f.). A successful “method or rotation” will of course need to recognize when philosophers with different vocabularies are looking at something from the same angle and when what they claim to see can be translated into one another’s terms. Innis thus has Dewey speak of “this noetic-noematic duality” and insists that Polanyi would be “in full accord” when Dewey claims that meanings are *had* before they are cognized” (*ibid.*)

How “full” this latter accord may be seen to depend on how much interpretive charity is appropriate. Dewey’s doctrine regarding the “having” of feelings and meanings prior to “knowing” them appears linked to his concept of a subconscious that “reflects all the habits a human has acquired” and that informs the “fringe” of “even our most highly intellectualized operations.”⁴ It is tempting to assimilate “having” to subsidiary awareness and “knowing” (“cognition”) to “focal” awareness, but “fringe” and “subconscious” echo a doctrine Polanyi found in William James and which he repudiated.

Attending *from* the pen and paper one is using to write a letter “*to* that which they mean, reduces them to a subsidiary status, but does not render my knowledge of them subconscious or preconscious, or such as one has of an indefinable Jamesian fringe” (*Meaning*, 194). Polanyi acknowledges that it is difficult to identify and sometimes impossible to specify whatever it is that links what he attends *from to* what it means; “tacit integration may often take place effortlessly unnoticed by ourselves. But all this does not make a subsidiary state an unconscious one” (*ibid.*) It is, after all, the effect of habit (the importance of which is stressed by all

the classic pragmatists), but when Dewey refers to the effects of habit as “subconscious” he appears to be alluding to the same effortless spontaneity and not to anything like the “unconscious” workings of, say, one’s kidneys. The effects of habit and the sense these effects give to what is present are “felt or directly had”; they guide one’s response. “Fringe” in Dewey is almost certainly an echo of James, where “it is part of the *object cognized*, — substantive *qualities* and *things* appearing to the mind in a *fringe of relations*”⁵

It is hardly surprising that it should be a struggle to find a vocabulary to describe explicitly what is not explicit in experience, and that someone who, like Polanyi, achieved significantly more clarity in this endeavor than did the early pragmatists, should find their vocabulary deficient. But to attribute to the early pragmatists an appreciation of the importance of the tacit dimension does not require an outrageous degree of charity. Polanyi and Dewey, do not, to be sure, treat the phenomena in ways that are obviously entirely compatible. Both fasten on the way spontaneous inference gives meaning to something by locating it as a part within a whole. (Compare *PK*, pp. 57-58 and *Experience and Nature*, note 4, pp. 212-213.) But Dewey stresses the role of sentiency in the anoetic apprehension (“having”) of the meaning of the *whole* situation, and there is clearly a moment in Dewey’s account where the sense of the whole is transformed by cognitive interaction with its parts.

Whether this usefully complements Polanyi’s treatment, or is even compatible with it, invites further investigation. Innis does not take up this task; he is content to observe that “thinking is for Polanyi also a form of action, just as for Dewey action was a form—perhaps *the* form—of thinking” (140). The contrast here is elusive. All thought for Dewey is part of some practice and can only be properly understood in terms of the purpose it serves. When, as Innis goes on to observe, Polanyi “ascribes to knowledge quite generally the structure of a skill” (*ibid.*), he is returning knowledge to the genus, *habitus* (*hexis*), where Aristotle located both theoretical (*epistêmê*) and practical (*technê*) species of knowledge.⁶ This is one of the old ways of thinking for which “pragmatism” was said by William James to be a new name.

It is, nevertheless, in Dewey’s doctrine of felt quality, and in the “pragmatist aesthetics” to which the doctrine gives rise, that Innis looks for a framework for a critique of modern technology. The “cardinal thesis of ... [this] approach to aesthetic experience” is its continuity (if not identity) with “normal processes of living” (170). For Dewey all experience is permeated by the felt qualities of our organic responses to our environment; art *qua* “aesthetic production and perception [i]s an *idealization* or foregrounding of qualities found in common experience” (*ibid.*)⁷ Art, by this account, might be seen to work to reverse the effects of making felt qualities subsidiary to the distant meanings to which focal awareness spontaneously moves by tacit inference. When one considers how much our lives depend on the efficient treatment of what we encounter through the senses as subsidiary to what matters to us, it is not easy to see what value this would have except as a form of relaxation and recreation. Too much idealization in our lives would distract us from the serious business of living.

How Dewey might be taken as supporting the extension of “the scope of the aesthetic over the whole surface of the perceived world” (165) is perhaps then to be found in a passage from *Art as Experience* which Innis highlights by quoting it in full in two places (149, 186). In it Dewey contends that the products of the technological arts can become “fine in the degree in which they carry over into themselves something of the spontaneity of the automatic⁸ arts”. The thought that craft rises to the level of fine art when it expresses or in some other way embodies the energy that went into its production is worthy of dispute, but what bearing does this have on technology?

On both of the occasions that Innis quotes this passage, it is followed by two equally substantial quotations from Robert M. Pirsig's novel *Zen and the Art of Motorcycle Maintenance*. The first of these describes the way a craftsman's thoughtful procedure is determined not by a preset plan but by the nature of the material he is working on. It illustrates well the general process of thinking—of successful inquiry—that Dewey found in intelligent action. The second is a discussion of the “the deep inner kinesthetic feeling for the elasticity of materials” that Pirsig attributes to skilled mechanics and which allows them to recognize in very different circumstances when a nut is “fingertight,” “snug” or “tight [in a way] in which all the elasticity is taken up.” This is an excellent illustration of what Polanyi called “connoisseurship,” but how does all this frame an aesthetic critique?

Both passages that consider this series of quotations proceed to observe that modern industrial production has largely dispensed with this “mutual accommodation between self and tool” (188), “it thus tends to eliminate the ‘kinesthetic’ component and substitute in its place a ‘nonsomatic’ cybernetic ideal” (152). Dewey, indeed, had harsh words about life on the assembly-line in the 1920s and 1930s, but it wasn't to suggest reuniting the self and its tools by re-establishing the economy entirely on craft modes of production. If repetitive work is necessary, at least compensate those who have to perform it well enough so that they have time and opportunity to pursue activities that yield richer forms of experience. Dewey's critique of the practices of industrial production is only in part aesthetic; it is as much based on equity and social justice as on aesthetic considerations.

Dewey's criticisms of the products of industrial production and of the human-constructed environment are likewise only partially aesthetic. If the form of an object is ill-adapted to its use (182), that is a failure of design. If civic-architecture is “unworthy of the ‘fine civilization’ we aspire to be” (184), this is as much a failure to moderate the profit motive and to invest forethought in what is undertaken—failings of character (ethics) and of intelligence—as it is failure to seek and afford aesthetic satisfaction. Innis acknowledges this in the details of his exposition;⁹ the puzzle is why so much emphasis falls on the “aesthetic”—why it is an “aesthetic rationality” (198-202) that is needed, when the failures of rationality appear to be more general.

The series of three quotations (one from Dewey and two from Pirsig) is repeated with the suggestion that on the first occasion they were to be read in a “Polanyian context” with a “focus on the ‘tacit dimension’” and on the second in a “Deweyan context” with a “focus on the ‘aesthetic dimension’” (186). But sufficient work has yet to be done to clarify how these two dimensions are related. Appreciation of the tacit dimension contributes significantly to a clear, distinct and adequate concept of rationality. Innis's emphasis on “aesthetic rationality” suggests that an appreciation of the “aesthetic dimension” would have a similar effect, but readers who reach the end of the fifth chapter with the feeling of incomplete achievement will at least not find their guide suggesting they have altogether missed the point,

A truly comprehensive critique of technology cannot be carried out by relying on Dewey alone. His work can and must be integrated, as I have only schematically indicated, with that vast constellation of other thinkers who have seen the demand and developments of aesthetic consciousness a base from which to measure the interaction of man with the world through tools, instruments and media of all sorts (201-2).

While there might or might not be something to be gained by investigating further the relationship between the thought of Michael Polanyi and the classical pragmatists, scholars devoted to either will find valuable resources in the work Innis has done to bring a considerable (if not “vast”) “constellation of other thinkers” to bear on the *praxeis* that give form to our perceptions. Those who are frustrated at the neglect with which much of philosophy treats the problematics and the insights of either Polanyi or the classical pragmatists will find in this book surveys of a number of philosophers with similar interests, similar insights and similar roots in continental European thought, as well as examples of scholars in related disciplines whose work might serve to nourish new growth from those roots.

Ernst Cassirer, for example, is drawn into Innis’s conversations on several occasions, including one on the basis of a “remarkable passage”¹⁰ suggesting the probal nature of language by comparing a child’s learning to name things to the paradigmatic blind man groping his way with a stick (pp. 49-50). Cassirer is given a dominant role in Innis’s final chapter where in a little-known (not yet published in English translation) work¹¹ Cassirer is seen to generalize the “from-to” structure of consciousness into a “key insight into the nature of ‘tools’, ... [viz.] that they exemplify the universal spiritual power and the need for mediation quite generally” (208, cp. 214). “[F]or Cassirer, as for Peirce, there is simply no unmediated access to ‘being’ or the ‘world’” (212). And for Dewey as well. It was to express his own sense of the “need for mediation quite generally” that he initially presented his philosophy as “instrumentalism” and only with some hesitation allowed himself to be enlisted as a “pragmatist.”

From resources such as these it might be possible to fashion a canon to rival that which currently dominates philosophical education in that part of the world dominated by Anglophone culture. It is, after all, rarely possible for the thought of an isolated handful of philosophers, let alone a single independent thinker, to change the direction—change the assumptions that guide and the problems that engage—an established intellectual culture. Nothing demonstrates the interest of a problematic, and the value of a thinker’s contribution to its development, more than an extended conversation with others working on the same or similar problems. Innis has indicated where to find voices to engage in such conversations and has initiated several of them in useful ways.

Endnotes

¹ Innis frequently favors “technics”—Lewis Mumford’s “more nuanced and open textured usage”, (132)—in place of “technology.”

² Bühler and Gardiner are mentioned in a substantial footnote on p. 77 of Polanyi’s *PK*, a note which surveys literature on linguistic theory. Innis (68-9) suggests Polanyi uses conceptual resources supplied by Bühler and Gardiner throughout Chapter 5 of *PK*.

³ Cf. “Meaning exists within purpose and within purposeful behavior, a point that Dewey resolutely foregrounded in his organism-based theory of inquiry ...” (33).

⁴ John Dewey, *Experience and Nature*, second edition (LaSalle, IL: Open Court, 1929, reprinted 1971). On “having” and “directly felt” see pp. 211-13 and on the “fringe” see pp. 244-5.

⁵ William James, *The Principles of Psychology, Vol. I* (New York: Henry Holt, 1890; reprint Dover, 1950), p. 258 n. 2; italics in original.

⁶ See *Nicomachean Ethics*, Bekker pages 1139b32 and 1140a2.

⁷ This and the previous quotation from Innis are in part quotations from Dewey's *Art as Experience*, (New York: Putnam 1934; reprinted Perigee, 1980;) pp. 16-17.

⁸ *Sc.* "performance arts"—music, poetry dance. For the passage quoted see *Art as Experience* (note 7), pp. 227-8.

⁹ "The goal in technological production must be the organization of production and perception in such a way that vivid consciousness (*AE*, 266) can be sustained to the highest possible degree" (194).

¹⁰ *An Essay on Man*. (New Haven, Conn.: Yale University Press), 1944, p. 132.

¹¹ *Symbol, Technik, Sprache*, edited by Ernst Wolfgang Orth, John Michael Krois and Joseph Werle. (Hamburg: Felix Meiner Verlag, 1985.)

WWW Polanyi Resources

The Polanyi Society has a World Wide Web site at <http://www.missouriwestern.edu/orgs/polanyi/>. In addition to information about Polanyi Society membership and meetings, the site contains the following: (1) digital archives containing all issues of *Tradition and Discovery* since 1991; (2) a comprehensive listing of *Tradition and Discovery* authors, reviews and reviewers; (3) the history of Polanyi Society publications, and information on locating early publications not in the archive; (4) information on *Appraisal* and *Polanyiiana*, two sister journals with special interest in Polanyi's thought; (5) the "Guide to the Papers of Michael Polanyi", which provides an orientation to archival material housed in the Department of Special Collections of the University of Chicago Library; (6) photographs of Polanyi; (7) links to a number of essays by Polanyi, as well as audio files for the McEnerney Lectures (1962) and Polanyi's conversation with Carl Rogers (1966).

Response to Tiles, “On Our Exosomatic Existence”

Robert E. Innis

ABSTRACT Key Words: Michael Polanyi, pragmatism, forms of sense, language, perception, technics
This paper is a response to Jim Tiles, “On Our Exosomatic Existence.” It accepts the thrust of the close reading Tiles has given of my Pragmatism and the Forms of Sense but also points out he himself has not fully adverted to certain features of the book dealing with language as a form of social interaction, the precise way the notion of a form of sense is being used, the relations between Polanyi and pragmatism, the function of “quality” as an analytical category in Dewey’s aesthetics, and the actual conceptual framework used to discuss embodied technics. I fully agree with Tiles about the need for a philosophy that accepts the task of “an extended conversation.”

Jim Tiles’s generous discussion of my book is an exemplary exercise in the hermeneutical “principle of charity.” He has engaged many of its core themes with a keen, yet kindly disposed, critical eye. Taking direct aim at its theoretical center, he has nevertheless focused on aspects and themes of the book that would most attract the interests of the community of scholars that are informed by Polanyian procedures and insights, which play, as Tiles makes clear, an essential role in my book. Tiles is right to take the notion of “our exosomatic existence” as the focal point of the book, the goal of which was to explore what philosophical categories would allow us best to understand this root phenomenon of our lives and its exemplification in the twin systems of language and technics. My principal point was that these systems are *indwelt* and as a consequence they function as both enabling and constraining conditions of world-building and meaning-making. As enabling they give us new powers and faculties. As constraining, they pre-define our “access structures” to “the world.”

Tiles rightly emphasizes my exploitation of Polanyi’s pivotal discovery of the from-to structure of consciousness and of the heuristic fertility of the analogy of the probe. He also rightly foregrounds the inferential nature of our fundamental forms of meaning-making, which, however, do not need to be deliberate or under explicit methodical control. And he rightly turns close attention to the attempted linkages between Polanyi’s great achievement and other substantial, even, in my view, indispensable, contributions to our understanding of those “weblike systems of *meaning-making* in which we dwell, into which we have extended ourselves, and upon which we must fatefully rely”(4).

In fact, *Pragmatism and the Forms of Sense* was meant as a kind of continuation of a prior book, *Consciousness and the Play of Signs* (Bloomington: Indiana University Press, 1994--reviewed in *TAD* 22:3 (1995-96): 36-37.) where the relations between “perception” and “semiosis,” or between perception-based and semiotic-based theories of consciousness and meaning-making, were the theme. The conceptual resources exploited there (derived from Peirce, Polanyi, Dewey, Bühler, Cassirer) and the method employed were substantially the same as in the present book. I characterized the task there as a kind of Wittgensteinian “seeing connections,” which appears in *Pragmatism* as the “method of rotation.” Both books are in themselves philosophical probes and not meant to be treatises. Hence they are not “complete” or even completely systematic, nor were they meant to be. But they did have, or at least I tried to give them, a systematic informing

framework that worked at many different levels and held their parts together. Tiles recognizes this fact about the present book.

Tiles is admirably even-handed in his discussion, but there are a number of points, some of them informational, some of them dealing with interpretation, some of them critical, where some sort of response is, I think, called for.

First of all, there are actually three chapters that deal with language as a form of sense. The very first chapter brings Polanyi and Peirce into dialogue on the “perceptual roots of linguistic meaning.” The point is to show how both Polanyi and Peirce “push meaning down” to the perceptual stratum before they “push it up” to the articulate level of explicit sign and language use. The following chapter, which engages the complementary work of Karl Bühler, Alan Gardiner, and Philipp Wegener, focuses primarily on the notion of shared “fields” and “situations” as contexts and sources of linguistic meaning and as goads to the internal development of linguistic forms. This chapter does clearly indicate, as Tiles himself admits, that language is a frame or mold in which social interaction takes place—just as technics itself is. While Tiles is right to emphasize the need to foreground social interaction, I think that this notion operates at a rather different analytical level than that of a “form of sense,” as I used that term.

Language and technics are themselves forms of social interaction and a study of their constitutive features opens a large window on how social interaction takes place *in concreto*, in embodied sense-giving and sense-reading structures. There are clearly many other forms of social interaction, but language and technics are the defining matrices of social interaction itself, specifically in its human form. Smiling, kissing, greeting, humiliating, teasing, stereotyping, exploiting, and so forth are all forms of social interaction, but their distinctive features come from the symbolic and technical species that we are. They are permeated by semiotic and material conditions. So, when Tiles writes that “whether something is in the perceptual field of another as well as the intentions, needs or desires of another can be recognized without the mediation of language,” he is surely right. Every thinker in the pragmatist tradition would agree—and in fact it is one of the central features of the social psychological work of Dewey, for example, in his *Human Nature and Conduct*, and of the important essays of G.H. Mead. The very genesis of the self involves the progressive potentiation and mediation of pre-linguistic forms of interaction, both natural and social. But “without the mediation of language” does not mean “without mediation.” And, as I see it, mediation involves interpretation, and interpretively structured forms of human social practices, starting right at the fundamental perceptual stratum—and my book is about this very fact and its existential consequences attendant upon semiotic and technical embodiment structures. That is also why the first chapter in each of the book’s two parts starts with perception, exemplified first in Peircean and Polanyian insights into linguistically embodied perception and secondly in how Polanyi’s analytical apparatus enables us to think about “technics and the bias of perception: the tacit logic of embodied meanings” in novel ways. Polanyi’s emphasis on commitment, participation, and indwelling and on the role of tacit backgrounds all point to the ineluctable consequences and necessity of interpretation, understood in Polanyi’s case as a form of inference. The chapter on Giovanni Vailati’s linguistic pragmatism was meant to emphasize, from a rather different angle, the critical dimension of exploring the “biasing of perception” by language.

Secondly, Tiles asks about the exhaustiveness of the notion of “forms of sense.” Are language and technics *the* only ones? Well, in Tiles’s use of the term, clearly not. And, one might ask, what about art, religion,

myth, the political order, mathematics and the whole realm of number, quantity, and abstract relations? Are they not “forms of sense?” Yes, they are. So, are we involved in a contradiction here or some extended Homeric nod or systematic equivocation? I think not. The notion of a form of sense is related to, but not identical with, that of a “symbolic form” as the term was used by Ernst Cassirer and Susanne Langer. The symbolic forms they were concerned with are truly “finite provinces of meaning” in the phenomenological sense given to this notion by Alfred Schutz. But my goal was not to reproduce or reconstitute their projects but to do something different, following up, in fact, a hint of Cassirer’s that “language” and “technics” were the semiotic and material frames of all world-building *qua tale*. I wanted to show how different philosophical resources that were rarely brought into relation to one another could be organized around these twin foci. So, I set out to explore a topic in the material sense and exemplify a method at the same time. On a more general level, then, Tiles is right. There are multiple forms of sense, but my goal was, paradoxically, to explore some crucial aspects of the twin sources or defining matrices of the forms of sense, which I argued that language and technics are. Human life emerges out of these two sources that run along two intersecting trajectories. The other forms of sense—art, myth, ritual, religion, and so forth—arise from these enabling conditions.

Thirdly, as to the problematical “full accord” of Polanyi with Dewey’s claim that meanings are *had* before they are cognized, I based my proposal on the acritical way we are encompassed by, and constitute, wholes, in all senses that Polanyi gives to this notion. I do not think that “having” is, or can be, assimilated to subsidiary awareness alone. What I had in mind was the logic of skills and their appropriation that Polanyi made the operative centerpiece of his project of epistemological reconstruction. The model of skills in Polanyi is arguably more powerful than the model of perception (although I would not myself put the two in opposition). As to Dewey’s notion of the subconscious, I am not sure one should make much of this term. I think it covers much the same ground as Polanyi’s tacit background that is *indwelt* and used acritically unless we are faced with problematical situations that indicate a kind of “breakdown” or “interruption” of habitual “business as usual” transactions with the world and others. As to the notion of a “fringe,” what Polanyi repudiated was its identification with subsidiary awareness. The “fringe,” on William James’s account, belongs to the object-side, not the “consciousness-side” of the noetic relation. The fringe is neither subconscious nor preconscious. Indeed, the Jamesian fringe is not “indefinable.” It can be followed up and analyzed. But this following up and analyzing would itself uncover that the fringe is what we are conscious *of*, not what we are conscious *from*. As I see it, the “fringe” has a very different analytical function than the “subsidiary.” Strangely enough, Tiles quotes a passage from James that says exactly that. Polanyi’s repudiation of a correlation was right in what it affirmed, but wrong in what it seemed to deny, the validity of the notion of a fringe, which certainly has a phenomenological and analytical validity. James’s notion of a fringe is, I think, especially valuable in helping us understand the felt significances projected in art works.

Fourthly, Tiles touches upon the role of “quality” in Dewey’s pragmatist aesthetics, which I used as a critical device to analyze technology and technological embodiments. He is right to say that art, on Dewey’s account, “might be seen to reverse the effects of making felt qualities subsidiary to the distant meanings to which focal awareness spontaneously moves by tacit inference.” But I find it extremely puzzling to then say, as Tiles does, that since the “efficient treatment” of what we encounter is so important for “what matters to us,” too much of the type of idealization or foregrounding of qualities, that Dewey makes the heart of aesthetic experience, would “distract us from the serious business of living.” But it is precisely the intrinsic importance of the subsidiaries that lies behind Polanyi’s account of art, both in *Personal Knowledge* and in *Meaning*. Distinguishing between indication and symbolization as types of integrations, Polanyi says that in symboliza-

tion “the subsidiary clues do *not* function ... merely as indicators pointing our way to something else. In this second kind of meaning it is the subsidiary clues that are of intrinsic interest to us, and they enter into meaning in such a way that we are *carried away* by these meanings” (*Meaning*, p.71). This is why Polanyi speaks of a *self-giving integration*. It is also the reason why I found a close connection between Polanyi’s and Dewey’s theories and the possibility, relying on Polanyi, not just of an analysis of technology as embodied perception but, relying on Dewey, of an analysis of technology from the point of view of embodied qualities. Laying a Deweyan aesthetic grid over technics is meant to have both descriptive and normative force. Dewey wants to tell us both what has happened with the rise of machine technologies and their organization by different types of economic systems and the kind of “experiential price” that has been paid. The contrast that Dewey draws between the technological and the fine arts, then, is not motivated either by nostalgia or by some utopian hope. The last chapter of Dewey’s *Art as Experience* is essential reading here, but, it must be said, it simply exemplifies the chief theses and proposals found throughout the book as a whole. Moreover, while Tiles is also right to say that “Dewey’s critique of the practices of industrial production is only in part aesthetic; it is as much based on equity and social justice as on aesthetic considerations,” I never meant to say the opposite. My goal was to show how his aesthetic critique functioned as a kind of experiential ground level to his whole approach. Equity and social justice for Dewey were rooted in the availability and accessibility of types of experiencing that the various objective frames in which we live out our lives make possible. The focus on a distinctively “aesthetic rationality” in Dewey’s work was not meant to displace his concern with other forms of rationality, a concern which permeates his liberal and humane approach to life and to the “problems of men” and not just the “problems of philosophers.”

Fifthly, I think that Tiles underemphasizes the progression in my analysis of technics from the perceptual, through the aesthetic, to the semiotic. To say that the work of Ernst Cassirer “is drawn into Innis’s conversations on several occasions” and he is given a “dominant role in Innis’s final chapter” seems to me to be a bit on the weak side, since the whole point of that chapter was to show how a “semiotic” analysis and critique of the “information revolution” would look, a revolution, it has been claimed, that changes radically our relations to nature and our embodiment relations as such. In fact, there is an arc from the first chapter in the book to the last that is constituted by a recognition of “the universal spiritual power and the need for mediation quite generally.” This is surely not Polanyi’s way of talking about things, but, when all is said and done, it is certainly consonant with it.

Sixthly, and finally, I agree with Tiles that we need “an extended conversation with others working on the same or similar problems.” We need to move from a master thinker and master theory approach that refuses “translation” into other terms or will only accept other approaches that yield their sovereignty. But, in philosophy, such claims to universal sovereignty no longer have a place. We need collaboration and cooperation on both the theoretical and the practical levels, a willingness to focus on what Alan Gardiner called “the thing meant” and not engage in some sort of rhetorical knife fight. “Philosophy as conversation” is not just a slogan of the neopragmatists but an effective recipe for progressive insight. There are bound to be strong disagreements, facile agreements, and deliberate misunderstandings. Philosophy as conversation should not lead us into the Hegelian night in which all the cows are black. But what I tried to do in *Pragmatism and the Forms of Sense* is to practice, in addition to the method of rotation, what I also called a method of “retrievals and continuations.” In doing so, I brought to the table a group of thinkers and their positions that had in my opinion an extraordinary power to frame a long and deep discussion about universal formative principles of human lives. So, in full agreement with Tiles about useful conversations, let us continue.