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(Anti-)Realisms: The Metaphysical Issue

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# (Anti)Realist Implications of a Pragmatist Dual-Process Active-Externalist Theory of Experience

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**Résumé :** Les questions relatives à l'opposition réalisme/antiréalisme sont abordées à la lumière d'une philosophie pragmatiste de l'esprit. On élabore une philosophie pragmatiste de l'esprit dans les termes d'une théorie 'externaliste-active' de l'expérience vue comme double processus. Cette théorie pose en principe deux types d'expérience tels que la 'mentalité' (en tant que capacité à penser, émettre des hypothèses, formuler des théories, raisonner, délibérer) constitue l'un des deux types d'expérience. La correspondance formelle de la théorie avec les faits est caractérisée en termes de correspondance fonctionnelle entre ces deux types d'expérience. On discute alors les aspects réalistes et constructivistes de cette conception. L'externalisme-actif garantit une sorte de réalisme écologique, qui permet à la théorie d'éviter le constructivisme radical ou l'irréalisme.

**Abstract:** Realism/antirealism issues are considered in light of a pragmatist philosophy of mind. A pragmatist philosophy of mind is cast in terms of a dual-process active-externalist theory of experience. This theory posits two kinds of experience such that mentality (as a capacity for thinking, hypothesizing, theorizing, reasoning, deliberating) constitutes one of the two kinds of experience. The formal correspondence of theory with facts is characterized in terms of a functional correspondence between these two kinds of experience. Realist and constructivist aspects of this view are then discussed. Active-externalism guarantees a kind of ecological realism that allows the theory to avoid radical constructivism or irrealism.

The pragmatist philosophy of mind outlined in the first half of this paper is designed to shed light on what William James and John Dewey were concerned with a century ago in their wholesale rejection of traditional epistemology and metaphysics. What they took to be a viable alternative, if comprehensible at all, may seem irrelevant if not entirely

foreign to contemporary philosophy of mind. Nevertheless, contemporary philosophy of mind at least in some quarters is beginning to echo views proposed by James and Dewey.

These latter views, of course, have implications ranging beyond the philosophy of mind as such. The second half of the present paper looks at issues of realism and antirealism, discussing ways in which a pragmatist theory of experience incorporates both constructivist and realist tendencies and thus works toward resolving conflicts between hardcore realism and equally hardcore antirealism.

In his introduction to *Consequences of Pragmatism*, Richard Rorty makes the following interesting statement:

On the account of recent analytic philosophy which I offered in *Philosophy and the Mirror of Nature* [Rorty 1979], the history of that movement has been marked by a gradual “pragmaticization” of the original tenets of logical positivism. On the account of recent “Continental” philosophy which I hope to offer in a book on Heidegger which I am writing, James and Nietzsche make parallel criticisms of nineteenth-century thought. Further, James’s version is preferable, for it avoids the “metaphysical” elements in Nietzsche which Heidegger criticizes, and, for that matter, the “metaphysical” elements in Heidegger which Derrida criticizes. On my view, James and Dewey were not only waiting at the end of the dialectical road which analytic philosophy traveled, but are waiting at the end of the road which, for example, Foucault and Deleuze are currently traveling. [Rorty 1982, *xviii*]

What Rorty means by that last sentence is that James and Dewey managed to do early on what analytic and “Continental” philosophy would both eventually do, namely, “find a way of setting Philosophy to one side” [*xxi*] in favor of plain everyday “philosophy.” On this view “the best hope for philosophy is not to practice Philosophy”—neither to give in to the Platonic urge to “believe more truths or do more good or be more rational by knowing more about Truth or Goodness or Rationality” [*xv*], nor to make Philosophy scientific, as the logical positivists hoped for—but to adopt a naturalistic, behavioristic stance towards language, knowledge, and related matters of common human interest [*xxi*].

That may all be true; but Rorty’s last sentence above rings true in another sense that he perhaps would not acknowledge. The naturalization of philosophy has progressed at a brisk pace over the hundred-plus years that pragmatism has been a going concern. Riding the wave of Darwinism in the latter half of the nineteenth century and witnessing

the rise of the new physics and its affects on epistemology at the beginning of the twentieth century, classical pragmatists also contributed not only to the professionalization of philosophy in the U.S. but to the emergence of psychology as a science distinct from philosophy or logic. Yet it would seem that pragmatism disappeared from sight in the latter half of the twentieth century just as we began to see momentous developments in mathematics, statistics, logic, linguistics, and the sciences generally. These latter developments supplied many of the basic tools, topics, and issues of analytic philosophy, taking American philosophy in directions that James and Dewey never imagined. Are they indeed waiting at the end of that dialectical road?

Well, yes. Rorty's characterization of analytic philosophy as eventually finding ways to set Philosophy aside does not easily accommodate the fact that analytic philosophy in the twentieth century was as much "technicalized" in particular ways as it was naturalized or "pragmatized" in the course of assimilating methods from neighboring disciplines. Such developments have not always been so much "in favor of everyday 'philosophy'" as Rorty would have us believe. Pro-Philosophical twists and turns in that technicalization easily explain why pragmatism largely receded from view for much of the last half of the twentieth century, as if analytical philosophy balked and refused to go where its dialectical travels were taking it. Indeed, it is not often thought that James or Dewey might have something to contribute to the more technical developments that characterized this new dialectic. Nevertheless, where James and Dewey are waiting lies in a direction allowing greater technicalization but without a regressive Philosophy. By advocating substantive ideas and methodologies better suited for a comprehensively naturalized philosophy free from having to bear Philosophical loads, James and Dewey anticipated much of where analytic philosophy *should* have headed much earlier than it now seems to be heading.

In particular, Dewey developed conceptions of experience, learning, inquiry, and intelligence that are supposed to hold up to scrutiny not only in science or only in the classroom but generally in any phase or aspect of human life. Minimally, recent work in the philosophy of mind (despite previous detours) provides an interesting perspective on what Dewey was attempting to do. Work in the cognitive sciences has matured sufficiently in the last few decades so that certain recent developments can with only minor modification be incorporated into Dewey's theory of experience without compromising either of the two in any significant way. The benefits go both ways in that Dewey's theory of experience can positively contribute to these recent developments while the em-

pirical and explanatory strength of the latter may help to render more comprehensible the contrarian approach to epistemology and metaphysics that James and Dewey were advocating.

## 1 A Pragmatist Philosophy of Mind

By pragmatist lights, a major obstacle to progress in the philosophy of mind even to the present day is a faulty conception of the relation of mind to the head and to the world outside the head. This is evident in characterizations of the so-called “easy problems” of consciousness—problems, for example, of explaining the role of intentional states in controlling behavior, the reportability of mental states, the discrimination and categorization of stimuli, the focus of attention, and so on (*versus* the “hard problem” of accounting for the qualitative, phenomenal, subjective what-it’s-like nature of experience). Allegedly, the “easy” problems can be handled by neurobiology and computation theory [Chalmers 1995], [Chalmers 2002]—as if cognitive science only (or primarily) needs to figure out how the computer inside the head works. The problem here is neither with neurobiology nor with computation theory, of course, but with the uncritical assumption that the relevant locus of computation is exclusively *inside the head*. The “easy” problems thus are *not* being solved precisely because proposed solutions are based on a neuro-centric orientation to various basic distinctions—between mind and world, ideas and things, theories and facts. This neuro-centric bias by itself is enough to make the easy problems impossible to solve.

### 1.1 Folk Psychology and a Pragmatist Alternative

A generic though simplistic version of this way of thinking is depicted in Figure 1. In this view, everything is essentially aligned with an inner/outer brain/world distinction, including causal linkages going from outer to inner and *vice versa*. In particular, *experience* (sensation, perception) involves causal relations whereby the world impresses itself upon the mind. Conversely, the *action* arrow depicts causal relations in the opposite direction, often rationally mediated, whereby the external environment is manipulated according to the mind’s dictates.

*Representation* (a relation by which the mind and/or brain mirrors the world as well as its own workings) and *intentionality* (a relation of directedness toward an object, whether external or internal, real or unreal) are often cited in explanations of the internal (ir)rational processes

that mediate experience and action. There are many versions and refinements of this basic perspective. So far, *none of it works*, as confirmed by any recent philosophy-of-mind reader.

For what it is worth, we may contrast the foregoing folk perspective with a pragmatist theory of experience. A preliminary formulaic claim utilizing contemporary terminology goes as follows: *a pragmatist theory of experience = active externalism + a dual process theory of rationality + some additional tweaking.*

It is assumed that what follows the “=” is known to the reader, though a quick summary may be useful. On one hand, *active externalism* is the view that the environment external to the brain and nervous system plays an active role in constituting and driving cognitive processes [Clark 1997], [Clark 2001], [Clark 2003], [Clark & Chalmers 1998], [Noë 2004], [Rockwell 2005]. This is a fairly radical refashioning of the semantic externalism of [Putnam 1975] and [Burge 1979], embracing a form of cognitive externalism and, respectively, a version of epistemic externalism that does not presuppose cognitive internalism. Epistemic externalism in particular relies on notions of epistemic deference consistent with Burge’s conception of semantic deference or what Putnam calls the linguistic division of labor. In this case knowledge encompasses material artifacts [Baird 2004] and is socially distributed [Hardwig 1985], [Hutchins 1995], [Longino 2006]. Granted, this version of epistemic externalism is just the relatively uncontentious though nonstandard view that an individual’s knowledge includes factors external to the individual’s head and brain without being external to the individual’s range of possible experience, requiring no commitments either way concerning what may be altogether beyond the individual’s ken.

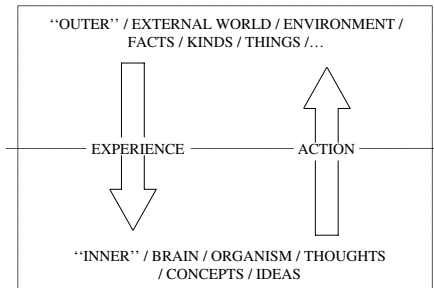


FIGURE 1: MIND *vs* WORLD = BRAIN *vs* ENVIRONMENT?

On the other hand, *dual-process theories of rationality* posit two complementary cognitive systems: (1) an evolutionarily older system that is fast, associative, automatic, unconscious, parallel, implicit, intuitive, instinctive, compulsory, affective, impulsive, rigid, involuntary; *versus* (2) a more recently evolved system that is slow, rule-based, controlled, conscious, serial, explicit, rational, reflective, deliberate, symbolic, verbal, flexible, pliable [Frankish 2004], [Stanovich 1999], [Stanovich 2004].

We can combine these two views to obtain a pragmatist theory of experience if two other insights from James and Dewey are also included. First, we have to reformulate the notion of *experience* not to embrace traditional empiricism but, more interestingly, so that thinking (reasoning, reflecting, deliberating, theorizing) are cast as one of *two kinds* of experience. In effect, this means that we should work primarily in terms of a dual-process theory of *experience*, rather than of cognition or mind or rationality.

Second, we need to peel various distinctions apart, introducing *two* ninety-degree shifts in perspective. Specifically, (1) distinctions between things and ideas, facts and theories, or perceiving and reasoning are to be regarded as *orthogonal* to an inner/outer distinction, being aligned instead with the two kinds of experience just mentioned (fast *vs* slow); and (2) intentionality, contrary perhaps to what has been made of Brentano's original conception of it [Brentano 1874], is to be regarded primarily as a kind of directedness towards maladjusted situations requiring resolution, where the breakdown/resolution distinction is itself orthogonal to both the inner/outer *and* the theory/fact distinctions. So, instead of aligning everything in parallel with an inner/outer distinction as in Figure 1, we would have an array of (at least) three independent (orthogonal) sets of distinctions.

Detailed textual evidence will not be presented here; but the key ideas outlined in the preceding paragraphs are present in William James's *Essays in Radical Empiricism* [James 1912], *The Meaning of Truth* [James 1909], *Principles of Psychology* [James 1890], and elsewhere. Likewise, these ideas can be found in John Dewey's *Essays in Experimental Logic* [Dewey 1916], *Reconstruction in Philosophy* [Dewey 1920], *Experience and Nature* [Dewey 1925], *The Quest for Certainty* [Dewey 1929], and elsewhere. These texts deserve careful scrutiny, particularly in light of their contributions to the philosophy of mind. The point here is that some important recent developments in the philosophy of mind are actually not so recent. Among the classical pragmatists, Dewey in particular characterized an inner/outer distinction in objective biological and ecological terms of organisms and their environments. Moreover, instead of

associating thinking or reasoning exclusively with the organism, he proposed (1) an ecological form of *active externalism* where experience is an interactive temporal process taking place in arenas of organism/environment transactions, (2) a *dual-process theory of experience* where thinking/reasoning/deliberating are cast as one of *two kinds* of experience (instinctual *vs* deliberate), and (3) a view that experiences (in a count sense of the term; both fast and slow) are *situated and episodic*, directed towards accomplishing resolutions of breakdowns.

In particular, Dewey's distinction between *primary* and *secondary* experience in *Experience and Nature* [Dewey 1925, 15–17] is orthogonal to a distinction between what is outside versus inside the head, though it parallels distinctions between things and ideas, facts and theory, perceiving and reasoning. Meanwhile, the breakdown/resolution distinction that characterizes the situated, episodic “intentional” nature of experiences is Dewey's generalized version of a doubt/belief conception of inquiry. On this account, the breakdown/resolution distinction—orthogonal both to an inner/outer distinction *and* to a primary/secondary distinction—is part of a theory of experience such that inquiries make up a particular class of experiences, that is, such that inquiries *are* experiences. In other words, one does not posit an independent conception of experience and only then address breakdown/resolution processes (for example, problem-solving that sooner or later must “face the tribunal of sense experience”) but rather the latter processes are constitutive of a proper conception of experience to begin with.

On this view, intentionality is indeed what distinguishes us as *living* creatures—that is, creatures capable of what Dewey calls *psycho-physical* activity [Dewey 1925, 198]—though that notion has to be coupled with a dual-process theory of experience to account for what distinguishes us as *thinking* psycho-physical creatures “capable of that organized interaction with other living creatures which is language, communication” [198].

These distinctions are depicted in Figures 2 and 3. In contrast with Figure 1, Figure 2 depicts a distinction between two kinds of experience that is orthogonal to an inner/outer distinction. As Dewey explains it, *primary experience* is a kind of organism/environment interaction that is instinctive and habitual—yielding “gross, macroscopic, crude subject-matters” that constitute apparent things and facts as they are directly encountered. Primary experience furnishes brute *data* for secondary experience. Conversely, *secondary experience* is a kind of organism/environment interaction that is reflective, deliberate, speculative—utilizing ideas, hypotheses, theories, and the like in efforts to explain and regulate the ongoing course of primary experience.



This distinction between facts and theories (and thus between primary and secondary experience), again, is orthogonal to one between an environment (outer) and an organism (inner). Nevertheless the distinction between primary and secondary experience is the basis for an account of *representation* in the sense that theories represent facts. Consequently, issues concerning truth and the like would have more to do with correspondences between two kinds of organism/environment interaction (both of which are equally accessible) and *not* so much between an inner mind and an outer world (each by itself being mysterious and essentially inaccessible by all current accounts).

Figure 3 depicts a second ninety-degree shift away from a simple inner/outer distinction, pertaining in this case to the *directedness* of experiences (in the count sense of the term). The breakdown/resolution distinction that determines the direction of *an experience* is thus orthogonal to each of the former two distinctions. (View Figure 3 as being rotated ninety degrees into and out of the page from Figure 2.)

*Intentionality* (at least as immediately occurrent directedness toward an *inexistent* object; *not* in every sense of *aboutness*, e.g., in the sense that representations of facts are *about* facts) may be identified with this directedness of experience with regard to a maladjusted situation in need of resolution—such that the ongoing course of experience tends to be both situated and episodic in nature, always involving primary experience (driven by instinctual, habitual responses to discordant circumstances) and often involving secondary experience (proceeding as deliberate reflective regulative inquiry) in various efforts to regain some kind of equilibrium in organism/environment transactions.

Putting all of this together, we obtain the following revised formulaic

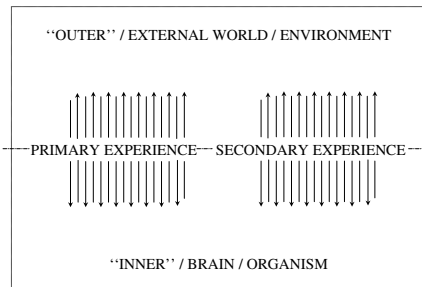


FIGURE 2: ONE 90° SHIFT: PRIMARY *vs* SECONDARY EXPERIENCE.

claim: a pragmatist theory of experience = active externalism + a dual-process theory of primary versus secondary experience + an account of experiences as situated, episodic equilibrations + an arrangement of these three independent factors into a multi-dimensional epistemological and psychological framework.

### 1.2 Two Challenges

The latter formula does not say as much as we should want, though it works against folk-psychological intuitions if it works at all. There are, of course, two obvious questions about active externalism in particular—two *challenges*—that highlight what is at issue here: (I) How exactly are worldly objects or facts *inner* as well as outer? (II) How exactly are thoughts or theories *outer* as well as inner? How would a pragmatist answer these questions?

There are two complimentary ways to reply to these questions (not that the present paper will pursue either way in any detail). On one hand, we might look to *philosophy*. On the other hand, we might try to do some *cognitive science*. In the first case, besides the works of James and Dewey, we could recite numerous well-known arguments and examples from the philosophical literature in favor of various kinds of externalism. This kind of reply should give at least some plausibility to a pragmatist theory of experience.

Question (I) is thus answerable by arguing for a kind of *operational* externalism. Namely, by virtue of the interactive coupling of organisms and their environments, primary experience is operationally projective and perspectival [Hanson 1958], [McDowell 1994], [Noë 2004], [Wittgen-

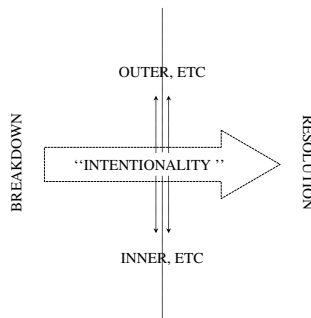


FIGURE 3: ANOTHER 90° SHIFT: BREAKDOWN AND RESOLUTION.

stein 1953]. This is *not* to claim that perception or perceptual facts are “theory-laden.” That is a different point that is specific to perceivers capable of entertaining “theories” whereas the present point is intended to cover all perceivers in general. The present point pertains not to theoretical but to operational perspectivity. The point is that primary experience is laden by operational capabilities, and these capabilities depend as much on the organism’s constitution as on environmental conditions under which they are implemented. For instance, perceptual illusions clearly exemplify ways in which our perceptions are geared (beyond our deliberate control) to the workings of our sensory machinery, not *solely* to how and what things are independently of our perceiving them. Thus: outer objects are also *inner* in the sense that their direct presentation in primary experience is a function of the organism as much as of the environment.

Question (II) can be addressed using concepts and arguments associated with *semantic* externalism [Putnam 1975], [Burge 1979], [Luntley 1999], *cognitive* externalism [Clark & Chalmers 1998], [Clark 1997], [Clark 2001], [Noë 2004], [Rockwell 2005], and *epistemic* externalism [Baird 2004], [Hardwig 1985], [Hutchins 1995], [Longino 2006]. These arguments will not be recounted here, but their cumulative upshot is that the *supervenience base* of secondary experience is extended into the world beyond brains or body surfaces. This larger supervenience base includes spatio-physical structures particularly as they are involved in the technological, cultural-linguistic, and social-institutional complexes in which those brains and bodies are embedded. Thus: inner thoughts are also *outer* in the sense that their direct occurrence in secondary experience is a function of the environment as much as of the organism.

On the other hand, one should also respond to questions (I) and (II) by trying to do some *cognitive science*. The aim in this case is to build and test working models to try to fathom how far one can run with such ideas. Primary and secondary experience will call for different kinds of modeling techniques that nevertheless must be mutually compatible and subject to some kind of synthesis. A number of existing research programs and modeling techniques may be useful here, though we will only speculate about such prospects.

In response to question (I): it is not unreasonable to think that primary experience may be modeled (*i*) using subsumption architectures [Brooks 1990]; (*ii*) using artificial-life simulations, genetic algorithms, “constrained generating procedures,” and *complexity science* [Beer & Gallagher 1992], [Clark 1997], [Holland 1998]; more generally, (*iii*) by way of *dynamical systems theory*, including but not limited to *neural*

*network* or *connectionist* models [Port & van Gelder 1995], [Clark 1997]; or more specifically (*iv*) drawing on conceptual and methodological aspects of *ecological psychology* [Gibson 1979], [Heft 2001]. Regardless of how we might employ any of these modeling strategies, the challenge in all such efforts is to model perception and object-recognition processes that are fast, robust, and reliable.

In particular, if we take the ecological active-externalism premise seriously, we can only base an account of primary experience on the idea of *elementary ecological interactions* of some sort. Ecological psychology suggests that we start with a primitive notion of active invariant-extraction or invariant-detection as this elementary form of organism/environment interaction. We could construct a generic notion of a *program* from that of invariant-extraction (that is, an atomic program in this setting would be the implementation of a given invariant-extraction capability so as to extract a specific invariant, or a specific instance of an invariant, as it were—not unlike an assignment of a value to a variable, though not exactly like it either). We are then able to utilize a respective multi-modal dynamic logic to model “computational” features of primary experience [Burke 2002]. Perceivable objects (or *kinds* of perceivable objects, more precisely) would have to be cast in terms of frames or models defined over such logics, thus providing one way to capture the Gibsonian idea that objects are essentially systemic bundles of affordances. The fact that the details of such models would be ecological in nature “all the way down” (and all the way up, for that matter) would explain how it is that any perceived object is as much a function of the organism as of the environment and hence is as much inner as it is outer.

In response to question (II): it is reasonable to speculate that modeling secondary experience would focus especially on the role of languages and cultures in human experience, these being the media of slow and deliberate experience. This emphasis would have to include social-institutional structures (economic, political, etc.) as external sources of constraints on individual rational choice [Clark 1997, chap. 9–10], [Satz & Ferejohn 1994].

More generally, this modeling task calls for a thorough reconsideration of the nature and role of language in human experience. It will almost certainly require (*i*) that we rethink *semantics*. For example, *set theory* is not a good place to begin insofar as “objects” are real enough but are neither fundamental, elementary, nor primitive, no matter that they may be as real as anything is real. But if set theory is suspect, so are traditional (Tarski-style) approaches to semantics, particularly as the latter are geared to formal languages that (if only intuitively) regard

nameable objects as ontologically fundamental. The question then is how to proceed if we instead take invariant-detection capabilities to be fundamental and proceed as above with a constructed notion of objects and kinds of objects. One cannot simply do business as usual so far as formal semantics goes. Focusing on language and culture in models of secondary experience similarly requires *(ii)* that we seriously rethink logical *syntax*. If “objects” are not fundamental, then we should not blindly adhere to a logical syntax that takes them to be so.

It is also necessary *(iii)* to rethink *pragmatics*—for example, to reconstruct *relevance theory* [Sperber & Wilson 1995], first, by dispensing with Fodor’s computational theory of mind and opting instead for a pragmatist view informed by Mead’s social psychology [Burke 2005] and, second, by supplementing the idea of *relevance* with one of *utility* so as to accommodate the intentional breakdown/resolution dimension of experience [Burke ms].

Otherwise, on other fronts, *(iv)* Lakoff and Núñez [Lakoff & Núñez 2000] may help to explain how the present framework can accommodate mathematical cognition, where mathematical ideas are constituted by way of *metaphor* though they are grounded in bodily activities and thus rooted in primary experience. What is particularly significant about their conception of the role of metaphor in the growth and development of mathematical cognition is that it may help to explain the distinction and connection between primary and secondary experience in general, namely, not as mirroring but as a *layering* of schematic metaphors, constituting a coupling and/or clutch mechanism of sorts (see below).

Also, *(v)* we might employ models of *bounded rationality* that focus specifically on “fast and frugal heuristics” [Gigerenzer, Todd, & the ABC Research Group 1999], [Gigerenzer & Selten 2001], [Clark 1997]. Some of the work being done along these lines may be pertinent to modeling primary experience directly (for example, catching a fly ball on the run) while other work seems to deal with fast but deliberate choices (for example, choosing which of two or more gambles one is willing to take).

In any case, *(vi)* all such modeling has to be informed by *evolutionary* accounts of the emergence not just of symbol-use but of full-fledged compositional languages capable of handling sentences, propositions, concepts, and the like in secondary experience—as opposed to creatures’ dealing directly with things, kinds, facts, and so on in primary experience [Burke 2002], [Burke 2005].

To summarize: We do not have to look far to find existing modeling techniques that may be used to fill out a pragmatist theory of experience. The one key idea is to take the ecological interactional premise seriously and begin with a primitive notion of active invariant-detection. On that

basis we may attempt to apply various modeling strategies so as to clarify and render testable the pragmatist theory of experience outlined above.

## 2 (Anti)Realism?

The preceding discussion is only a preliminary survey of strategies one may use to model and test a pragmatist theory of experience. But clearly a lot of work can be done to try to (in)validate that theory. The remaining half of the present paper deals with the less ambitious task of examining realist and antirealist features and commitments of this theory. Historically, a major impetus for a pragmatist theory of experience has been the felt need to avoid long-standing conundrums associated with an apparent chasm between mind and world as envisaged by folk psychology. The pragmatist remedy to these conundrums is the use of a strategy by which both facts and theories straddle that apparent chasm. A defense of such a view must answer allegations that it inevitably leads to idealism, subjectivism, solipsism, or other dire consequences of radical constructivism.

We can approach these issues by way of the notion of *representation*. Representation is of course a key factor in the operations of human mentality; but it is not at all obvious how best to characterize the representation relation. The relevant distinction in the present view is one not between brain versus external world but between *secondary* versus *primary* experience. In the present framework, the latter distinction is the best if not only way to talk about mind representing the world, or about *thoughts* representing *facts*.

Several points can be made straightaway about the nature of representation if we cast it as a relation between secondary and primary experience. This view suggests that representation is not essentially a *mirroring* relation, and it is something other than the adaptation of neural systems to environmental conditions. Instead, representation involves operational correspondences or couplings between two kinds of organism/environment interactions and thus between two kinds of adaptations of neural systems to environmental conditions. As opposed to inner representations *mirroring* the outer world, the important relation here is a functional, operational *coupling* of fast and slow interactive processes. In this view, secondary experience requires the equivalent of a “clutch mechanism” as part of this coupling, making it possible for one to disengage from instinctive, habitual transactions with the world and otherwise to slow things down (when possible) in response to trouble-

some circumstances where we may need to switch gears (as it were) and redirect ongoing activities.

How to account for this disengagement capability as a feature of secondary experience (and thus as characteristic of representation) is not straightforward, but it has already been suggested above that one approach might be to generalize the conception of metaphorical correspondence that Lakoff and Núñez have used to account for the growth and development of mathematical cognition. For example, at least 43,000 years ago humans developed systems of gift-exchange perhaps as a form of favor-tracking or to serve as an external “memory” of kinship relations or other forms of reciprocal altruism. It is thought that such giving originally may have worked as a kind of insurance or social security among groups with limited, precarious, specialized resources, as with present day !Kung San hunter-gatherer groups in Botswana. The point is that the giving or sharing of ostrich-eggshell jewelry, for instance, is a *representation* of the giving or sharing of life-sustaining resources in the sense that (1) the giving of jewelry corresponds metaphorically to the giving of life-sustaining resources and (2) the giving of jewelry, as a hedge against hard times, is more or less abstract and symbolic in the sense that it pertains to *possible* givings of valuable food or water in different not-yet-existent circumstances. Jewelry does not exactly mirror food and water, and the giving of jewelry does not exactly mirror the giving of food or water; but schematic metaphorical correspondences in such instances in the way that Lakoff and others characterize such correspondences are not difficult to imagine [Lakoff & Núñez 2000], [Lakoff & Johnson 1980]. The question, of course, is whether (iterations of) this kind of analysis can serve as the basis for a full many-layered account of representation.

In any case, the claim here is that secondary experience as such allows us to stop and think (or at least to *coast* and think) about what is happening in given circumstances and how best to react—versus acting on mere impulse alone. A pragmatist theory of experience thus distinguishes facts versus theories, things and ideas, and so forth, so as to incorporate these distinctions into a single conception of experience consisting of an operational coupling of two kinds of experience: fast-and-instinctive versus slow-and-deliberate. A key point here is that representations constitute the warp and woof of slow-and-deliberate secondary experience and thus are not essential as such to fast-and-instinctive primary experience. Representations bear on primary experience only in the sense that features of the latter are “represented” in secondary experience (whatever that may mean) such that the latter may influence the course of

primary experience.

Obviously, this account construes the representation relation as being *orthogonal* to an organism/environment distinction. It is instructive to contrast this view with Quine's holism [Quine 1951]. Specifically, Quine's brand of holism fails to accommodate a perspective whereby various epistemological distinctions are orthogonal to a physical-spatial inner/outer distinction. The central and peripheral parts of a Quinean "web of belief" correlate exactly with what is inside versus outside the brain, with *experience* being characterized in terms of irritations of nerve endings at the interface between the two [Quine 1960], [Quine 1981]. Quine's metaphors involving webs of belief and man-made fabrics of science clearly illustrate a common problem with many treatments of realism/antirealism issues, whether one espouses metaphysical realism, scientific realism, epistemological constructivism, conventionalism, irrealism, or what have you. It is the problem, again, of uncritically assuming a folk-psychological perspective that (1) positions mind, ideas, theories, beliefs, and the like inside the head, (2) places the world, things, facts, reality, and such outside the head, and (3) casts experience as some kind of flow of information from the latter to the former by way of various orifices and membranes at the head's and/or body's extremities.

Alternatively, a pragmatist theory of experience explicitly rejects the latter folk-psychological perspective and therefore lies nowhere in the standard spectrum of positions one may take on realism/antirealism issues. Nevertheless it bears some kind of relation both to metaphysical realism and to radical constructivism given that it attempts to accommodate what is right in either extreme view while avoiding the pitfalls of a schizoid folk psychology. We would want to say that a pragmatist theory of experience is in some sense *both* constructivist *and* realist rather than neither, though it is neither if one insists that realism and constructivism are absolutely and irrevocably inconsistent with one another. The positive claim that a pragmatist theory of experience is both constructivist and realist is, of course, the more interesting of the two positions one might take in this regard.

## 2.1 Constructivism

Constructivist aspects of a pragmatist theory of experience are fairly obvious consequences of the fact that it is a dual-process theory of primary and secondary experience that turns the fact/theory distinction ninety degrees sideways so as to be orthogonal to a biophysical inner/outer



distinction. In this view, to check theories against facts (ideas against things, mind against the world) is to check one (slow) kind of experience against another (fast) kind of experience. Thus, on one hand, things and facts are involuntary upshots of primary experience, whereas ideas and theories are products of a different (secondary) kind of experience—requiring more recently evolved experiential capabilities that are rule-based, controlled, and deliberate.

Again, the notion that facts are “theory-laden” is not the crucial point here. Rather, we should first note that facts and objects in themselves are necessarily constituted in part by the automatic, instinctive, impulsive ways in which *we* access the world. That facts (as products of primary experience) are *practice*-laden is the fundamental sense in which a pragmatist theory of experience leans toward constructivism.

Notice, nevertheless, that facts (things, realities) are indeed *brute* facts (things, realities), being what they are independently of what we may *think* them to be, even if they would not be independent of our modes of primary experience. This is a rather weak form of constructivism that is not unpalatable if one can appreciate the robustness of the epistemic objectivity that it allows.

The different issue of how and whether hypotheses and theories (as features of secondary experience) bear on the reality or non-reality of the entities they make claims about, whether observable by “unaided” perceptual capabilities (e.g., rocks) or not (e.g., electrons), is a recurrent practical issue that nevertheless should not present particularly deep philosophical mysteries. There is after all not a huge difference in principle between rocks and electrons insofar as instances of either of these kinds of things are present to our perceptual systems only as they are filtered through perceptual activities. We might try to peer behind this veil of practices into an alleged bare reality of things, but we would then lose any grasp of what a given thing may be as a real object insofar as it has any accessible bearing on us. It is as if the sensible effects of perceptual practices constitute a veil in which reality is shrouded but such that what is behind the veil immediately evaporates in the very act of lifting that veil. For a pragmatist theory of experience, if sensible effects of perceptual practices indeed constitute a veil, then attending to the fabric and flux of this veil in reactive contact with the world is precisely how we discern the contours of reality. This veil is not to be lifted but rather pressed, prodded, and molded against anything that offers resistance, whether the results be rocks, electrons, or whatever.

Of course, quite a bit more theory accompanies experiences of electrons than that of rocks, for most of us, which is to say that our ex-

periences of electrons are considerably more theory-laden than are our experiences of rocks. The fact that this difference is so pronounced may seem to support a kind of instrumentalism which holds that electrons “exist” only to the extent that they work within this or that theory of physics or chemistry (and that is all that need be said about their ontological status). But this ignores the fact that the last one hundred years of science and technology has rendered their sensible effects so familiar *in primary experience*—so that they “work” concretely within primary experience, not just formally within this or that theory—that we regard electrons as somehow real independently of any particular theory or even independently of admitting that our current theories are probably inadequate. Ultimately we may be wrong in thinking them to be real in this way (as happened, for instance, with “celestial spheres”); but for now there is no point in insisting that they are *only* useful fictions—just as there would be no point in saying such a thing about rocks.

## 2.2 Realism

To question whether a pragmatist theory of experience is realist or not presupposes some prior effort to clarify what is meant by “realism” in the first place. In particular, the style of realism that is compatible with a pragmatist theory of experience is significantly constrained by the fact that an active-externalist ninety-degree-shifted dual-process theory of experience cannot reasonably regard “things” or “objects” as primitive denizens of an external universe. The idea of a “thing-in-itself” independent of primary experience is vaguely meaningful but largely useless here. Likewise, the question-begging practice of taking domains of first-order quantification to be domains of *things* (with the full-fledged ontological commitments this is supposed to entail) is especially questionable—in which case the entire edifice of mathematical logic in its present form becomes suspect.

A pragmatist theory of experience and its consequent style of realism have to be formulated and otherwise grounded in some other way. The way to do it, again, is to take seriously the active-externalist assumption, literally, that neither primary nor secondary experience can be located exclusively inside or outside the head. Each kind of experience occurs rather in a field of inner/outer (organism/environment) interactions, the point being that any primitive elements to which we might appeal in psychological modeling must be elementary modes of such interaction. Anything else will almost certainly slippery-slide us back into some form of folk psychology.

As outlined earlier, “objects” or “things” in this view are easily accommodated as instances of *kinds*. Kinds, in turn, may be cast as (classes of) models of multi-modal dynamic logics based on the notion of elementary programs as implementations of invariant-detection abilities. There are, of course, “easy” problems of primary experience as well as the “hard” what-it’s-like problem of primary experience, and this way of computationally modeling primary experience only addresses the easy problems. But this theory is clearly not idealist or otherwise radically anti-realist insofar as (1) the constitution of “kinds” depends on regularities in the external world as much as on established abilities of the organism, where (2) neither of these two factors depends in any essential way on how or what the experiencer does or might *think*. The notion that facts are necessarily constituted in part by the world that we often access in automatic and yet reliable ways is the fundamental sense in which a pragmatist theory of experience is realist.

Further details are hard to summarize, especially since they have yet to be worked out to any acceptable degree. But if elementary modes of interaction are indeed where we should ground a pragmatist theory of experience, any elaboration of details would have to include a number of things that have already been mentioned or else are clear consequences of what has been discussed so far.

In particular, state-of-the-art physics and biology, on their own terms, will always set the stage *informally* (or meta-theoretically) for how we distinguish organisms versus environments and thus how we characterize so-called *active externalism*. Of course, this stage-setting will always be tentative. Fortunately there are bodies of physical and biological facts and concepts (that the earth is more or less spherical, that the gravitational constant at place X is such and so, etc.) that, regardless of the fate of various cutting-edge developments, will pretty much remain intact and thus provide a stable vocabulary for talking about what is inside and outside of brains and heads, at least in physical and/or biological terms. Be that as it may, the cognitive sciences do not fall squarely within the purview of physics and/or biology. We are thus going beyond mere physics or biology when we draw on *ecological psychology* as a way of modeling primary experience. In particular, elementary modes of interaction and thus primitive features of primary experience would be characterized generically as *abilities to extract or detect invariant information* in the midst of ambient fluxes of activity; and each instance of such detection has an elusive what-it’s-like quality that escapes merely physical or biological explanation. In this basic sense, it is fairly clear that we are already assuming something like a live creature as an agent

capable of having experiences in which qualitative invariant-detection plays a fundamental role.

We have also seen, at least briefly, how to give an account of *things* or *objects* in primary experience as instances of ecological systems of *affordances*. Of courses, affordances are always *affordances for* one or another live creature. Any manner of modeling primary and secondary experience, to be successful, must be able to make sense of this notion of affordances, especially if the latter is the key to making sense of *objects* and *kinds* of objects. The claim here is not that things or objects do not *actually exist* but only that they are not suitable as psychological (or logical/semantic) primitives when regarded as being wholly independent of any particular perceiving agent. An object or substance that we regard as debris may be perceived as nutriment by some other creature. That one-and-the-same stuff, if it is real at all, is fully real. But what it is real *as* depends essentially on who is perceiving it. At the same time, the fact that it is compost material to a given human being and the fact that it is food to a given earthworm are two equally factual facts. For this reason alone, a pragmatist theory of experience does not easily lend itself to nominalism insofar as there are no objects to speak of except as instances of kinds; and there are no kinds, for that matter, except with respect to this or that live creature.

It may help to compare this affordance-based notion of facticity with the formal-semantic notion that sentences are not simply true or false absolutely but are only true-in-a-model or false-in-a-model. This relativization of truth to models in no way weakens the notion of truth but only clarifies what it means to say that a claim is true. The idea of relativizing object-hood and kind-hood to specific living organism/environment systems is a more complicated idea in need of substantial clarification; but it is designed not to compromise the notions of actuality or facticity but to clarify what it means to say that a given object actually exists or that a given possible fact is indeed an actual fact. That is what the notion of affordances is all about.

We should also keep in mind as well that the preceding discussion is to be couched within a theory of experience that accommodates the situated nature of experiences as episodes of resolution of breakdowns. *Objects* occur as instances of this or that *kind* only as they might occur in such situations, or so the theory goes. Something worth noting here is the fact that such situations are not locatable anywhere except within fields of interactions that constitute living organism/environment systems. Situations initially are breakdowns or maladjustments in such interactions.

It is only in that sense that they are “parts of the world.” Nevertheless they are indeed parts of the world, not just subjective states.

The bottom line is that a pragmatist theory of experience is realistic in the sense of Gibsonian ecological psychology—not so much with regard to individuals or universals in any traditional sense, but with regard to ambient fields of organism/environment interactions and to engrained abilities of respective live creatures to detect invariants in the flux of those interactions and thereby to perceive things as systemic bundles of affordances. Such things are indeed as real as anything gets. But realism/antirealism issues have been recast in such a way that invariant-extraction abilities are what a pragmatist theory of experience may take to be fundamental and thus what it may take to be fundamentally real. Perhaps the more important point is not just that we can attribute reality to what we take to be fundamental but rather that a pragmatist theory of experience calls for different commitments as to what we should take to be fundamental.

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