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From Embodiment to Agency

Cognitive Science, Critical Realism,
and Communication Frameworks

Abstract. The primacy of practice in the development of knowledge is one of materialism's fundamental tenets. Most arguments supporting it have been strictly philosophical. However, over the past thirty years cognitive science has provided mounting evidence supporting the primacy of practice. Particularly striking is its finding that thought is fundamentally metaphoric—that images emerging from everyday embodied activities not only make ordinary experiences intelligible, but also underpin our more abstract engagements with the world, elaborated in disciplines such as ethics and science. Cognitive science's implications must now be absorbed into critical realism. Cognitive science bolsters critical realism by providing a scientifically-grounded analysis of the passage from body to mind and the fundamental unity between them, while sustaining their distinctiveness. Its implications for critical realism ripple out in four waves: first, critical realism's understanding of the mind/body relationship; second, its concepts of the process that connects theory and practice, and what that means for critical realism's view of intellectual production, the place of metaphor in scientific theorization, and cultural development; its view of culture as a complex whole; and finally, its theory of human agency as embodied and intentional.

Key Words. (Primacy of) practice, cognitive science, communication frameworks, metaphor, culture, agency

One of materialism's fundamental tenets is the primacy of practice in the development of knowledge. Most arguments advance this view on a logical or philosophical basis, frequently saying that knowledge is an induction from the results of experience or that it must be proved through hypothesis-based testing. For instance, Marx's second thesis on Feuerbach holds that determinations of truth require practical tests: 'Man must prove the truth, that is, the reality and power, the this-sidedness of his thinking in practice'.[1] Bhaskar argues for 'the practical nature of all theory and the quasi-propositionality of all practice', with theory depending on prior practical reasoning, and practice depending on previous theoretical reasoning.[2] These positions—which are correct as far as they go—are

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[1]   Robert T. Tucker, ed., *Marx-Engels Reader* (New York: Norton, 1972), p. 108.
[2]   Roy Bhaskar, *Dialectic: The Pulse of Freedom* [*DPF*] (London: Verso, 1993), pp. 66–69.

largely concerned with discursive knowledge, the kind that we articulate consciously and can express verbally. Some analyses delve to a more fundamental level by examining embodiment (the connection between mind and body), but often in a general and abstract way, without wrestling with the concrete details, the possible depth of embodiment's role in the mind, and the implications this might have for philosophy and social theory. Archer's recent study of agency is an example. She emphasizes that consciousness is not so much a sequence of propositions as inarticulate know-how; language is an emergent stratum deriving from our embodied relations with the practical world.[3] But her position remains a generalized analysis that tells little about how language's roots in embodied experience might affect language and cognition themselves.

However, over the past thirty years detailed scientific evidence has mounted to support the 'primacy of practice' thesis at the level of embodiment. The evidence gains considerable force because it dovetails various fields, including neuroscience, psychology, linguistics, ethnography, and philosophy, all feeding into the field of cognitive science, which has itself been reconceptualized. Particularly striking is science's finding that thought is fundamentally metaphoric in its operations—that myriads of images emerging from everyday embodied activities not only make ordinary experiences intelligible, but also underpin more abstract engagements with the world, such as ethics and science. This approach to the primacy of practice principally concerns the subconscious and the practical sorts of cogitation that provide the very structures permitting discursive knowledge.

Since, as Bhaskar observes, 'scientific theories constitute a significant ingredient in philosophical thought',[4] the implications of cognitive science must now be absorbed into materialist analysis, and into critical realism specifically. One at cognitive science's most public face is probably the work of linguist George Lakoff and philosopher Mark Johnson, especially their collaborations in *Metaphors We Live By* and *Philosophy in the Flesh*.[5] The latter is especially significant, because in it Lakoff and Johnson argue that accepting the results of cognitive science entails jettisoning empiricism in

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[3]   Margaret S. Archer, *Being Human: The Problem of Agency* [*BH*] (Cambridge: Cambridge University Press, 2000), pp. 132, 136.
[4]   Roy Bhaskar, *A Realist Theory of Science* [*RTS*] (Sussex: Harvester Press; Atlantic Highlands, NJ: Humanities Press, 1978), p. 7.
[5]   George Lakoff and Mark Johnson, *Metaphors We Live By* (Chicago: University of Chicago Press, 1980); George Lakoff and Mark Johnson, *Philosophy in the Flesh: The Embodied Mind and Its Challenge to Western Thought* [*PF*] (New York: Basic Books, 1999).

favour of a philosophy they call 'embodied realism', a philosophy that bears striking similarities to critical realism.

Cognitive science has certain limitations that require critical realist reframing. Nevertheless, it offers much for critical realism to adopt or adapt. Cognitive science bolsters critical realism by providing a scientifically grounded analysis of the passage from body to mind and the fundamental unity between them, while sustaining their distinctiveness. Its implications for critical realism ripple out in four waves: first, critical realism's understanding of the mind/body relationship; second, its concepts of the process that connects theory and practice, and what that means for critical realism's view of intellectual production, the place of metaphor in scientific theorization, and cultural development; its view of culture as a complex whole; and finally, its theory of human agency as embodied and intentional. In tracing this sequence, I will ultimately link cognitive science's ideas with a theory of a particular social structure that connects the emergence of metaphor in thought with the production and dissemination of thought: communication. However, as Archer has argued, 'The realist account [of the primacy of practice] starts in "privacy", in human exchanges with the natural world, rather than in the public domain of social relations'.[6] It is there we must begin.

1. *The Transitive Dimension and the Imaginal Character of Cognition*

The first moment of cognitive science's impact on critical realism is its key finding that thought is deeply shaped by human embodiment. For Lakoff and Johnson there are three levels on which concepts are embodied. The uppermost is phenomenological embodiment, consisting of everything that is conscious or available to consciousness, including mental states, physical and social interactions, and our sense of the 'feel' or qualities of things. At the bottom is neural embodiment: the neural mechanisms that turn sensory input into perceptions, such as the perception that an object has a certain colour (when in fact colour is the brain's interpretation of the light reaching the eyes). Thus neural embodiment involves the ways that the brain actually shapes perception, and in the process performs certain conceptual work. Between these two levels lies the cognitive unconscious, comprised of the vast range of mental operations that make possible and structure conscious experience and linguistic processing. (It is called 'cognitive' in the sense that it concerns mental operations and structures,

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[6]   Archer, *BH*, 116.

including those of sensation. The notion that cognition is strictly conscious and propositional belongs to other traditions.)[7]

A crucial activity of neural embodiment is categorization. Categorization is a neural necessity that evolved as a matter of survival, Lakoff and Johnson point out: it winnows down millions of inputs and groups them in various ways in order to produce distinctions and identifications. The process touches on Bhaskar's observation that things are defined 'by their position within the system of changing differentiations and differentiating changes': categorization, founded in embodiment, exemplifies Spinoza's dictum that 'all determination is negation', which Bhaskar supports as against the Hegelian converse, 'all negation is determination'.[8] Categories result from a process of negation. The specific nature of our bodies conditions our very possibilities for categorization and conceptualization. As a result, the vast majority of categories arise automatically and unconsciously through our embodied experiences. Moreover, not only do our bodies and brains require that we categorize, they also determine many categories we have and their structure.[9]

Categories are the basis of concepts, which according to Lakoff and Johnson 'are neural structures which allow us to mentally characterize our categories and reason about them'. This is a somewhat reductive way of describing them; it might be better to say that concepts provide organization within categories, such as having prototypes (e.g., core examples) or gradations. An *embodied* concept makes use of (or is even part of) that brain's sensorimotor system. The fact that we derive inferences from such concepts means that 'reason piggyback[s] on perception and motor control'. This piggybacking 'explains why we have the kinds of concepts we have and why our concepts have the properties they have. It explains why our spatial-relations concepts should be topological and orientational. And it explains why our system for structuring and reasoning about events of all kinds should have the structure of a motor-control system'.[10]

Embodied interactions with the material and social world provide the cognitive experiences behind our basic concepts of the world's contents and structure. For example, our concepts of containment emerge through our sensorimotor experiences of being inside a room, placing one object inside another, removing or pouring materials from inside something, and

[7]   Lakoff and Johnson, *PF*, pp. 10–14, 36–57, 102–114.
[8]   Bhaskar, *DPF*, p. 240.
[9]   Lakoff and Johnson, *PF*, pp. 17–19; George Lakoff, *Women, Fire and Dangerous Things: What Categories Reveal About the Mind* [*WFDT*] (Chicago: University of Chicago Press, 1987), pp. 286–289.
[10]   Lakoff and Johnson, *PF*, pp. 20, 43.

so forth.[11] Embodied interactions of this sort provide general forms for organizing perception and cognition in terms of numerous iconic models, such as 'container', 'path', 'force', 'link', 'cycle', 'part–whole', 'up–down', 'centre–periphery', 'hot–cold', and so forth—what Lakoff and Johnson call *image schemas*. They are not fully fledged images or mental pictures, since they lack particularity and detail: they are abstract patterns of space, time, connection and action, residing within the cognitive unconscious.

As we build upon such experiences of the world we turn image schemas into metaphors that help us conceptualize other sorts of things. We might apply the schema of containment to objects that do not have the same physical topology (for example, the star Polaris is 'in' the constellation Ursa Minor); and to things that cannot be physically perceived at all, whether inferred physical relations (the Moon is 'in' the Earth's gravitational field), or social relations (person A is 'in' a relationship with person B). Image schemas regularly structure thought through this sort of metaphorical projection, especially by extending particular images schemas from the physical realm to the abstract. For instance, we may perceive the body as a container for thoughts and emotions, and generate metaphors like 'She's bottling up her feelings' or 'Give me a minute to swallow that'. Extending the metaphor further, we may pose the conscious self as containing an unconscious one: 'Release the inner *you*!' Rather than simply reporting a pre-existing experience, metaphors help shape the experience itself. By these means image schemas can be adapted to fit many different situations, and through them we construct or constitute our experience and understandings. Thus image schemas are highly dynamic.[12]

These examples point toward issues of selfhood. Archer rightly maintains that even though the *concept* of self differs among cultures, all must possess a *sense* of self (starting with the ability to distinguish between self and not-self), and that the latter precedes sociality (and consequently also precedes the formation and learning of a society's concept of self). Interestingly, her arguments for the chronological and structural priority of the sense of having a self are in fact the experience of embodiment and a sense of distinction between self and environment, and the necessity for continuous practical activity in the world.[13] Another (and complementary) case for the primacy of the sense of self is the innate human capacity for reflexivity, connected most immediately to the experience of *error*: when things

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[11]   Lakoff, *WFDT*, pp. 271–275; Mark Johnson, *The Body in the Mind: The Bodily Basis of Meaning, Imagination, and Reason* (Chicago: University of Chicago Press, 1987), pp. 19–21.
[12]   Johnson, *Body in the Mind*, pp. 27–30, 48–51, 98.
[13]   Archer, *BH*, pp. 121–124.

are not as one expects (for instance, the pretty fire hurts), one is forced to distinguish between oneself (and one's ideas) and the rest of the world, and revise one's notions accordingly. Such is Peirce's argument: '*error* appears, and it can be explained only by supposing a *self* which is fallible'.[14] The moment of revision discovers the existence of the private, interior world, and appears to be a rudimentary form of the reflexive self-monitoring that Bhaskar considers critical to intentionality.[15] It establishes a source for the first practical and embodied knowledge of referential detachment and the distinction between the transitive and intransitive dimensions (TD/ID). It also provides a good example of importance of alterity, and at a higher level negativity and absence. The discovery of otherness (and with it, ignorance) launches the search for knowledge.

Expressions of the sense of self (one's inner life) are established around particular image schemas, which provide the imaginal framework for the *qualitative* experience of being engaged with an outer and an inner world. But because selfhood has many qualities, people's notions of selfhood do not hang on just one image, but several. Some depict the self as an object, a location, or one or more persons. Self-as-object metaphors appear in phrases such as 'She held herself back from slapping him', 'He forced himself to go to work', 'Let yourself go!', and 'They got carried away'. Examples of self-as-location metaphors include 'Is he out of his mind?', 'She was beside herself', 'I spaced out', 'She's very down-to-earth', and 'Pull yourself together'. The self is imagined as a person in two ways. One is the idea of having multiple selves: 'She's wrestling with herself over what to do', 'Take care of yourself', and 'I flip between the artist and the accountant in me'. Alternatively, self-as-person can involve projection onto another person, either by putting oneself in another's shoes in an advisory manner ('If I were you, I'd do X'), or by empathically adopting the other's viewpoint or experience ('I see why you feel that way').[16]

Another set of metaphors contrast one's behaviour with one's 'essential' self (the one you believe characterizes the real person). In one version, the 'inner' self reflects the true essence, which is masked by an external, public persona: 'Her toughness is a façade, she's really quite gentle on the inside'; 'He only comes out of his shell with close friends'. A second version is the reverse: the outer or customary self is genuine, the inner one unpleasant and false: 'He wasn't himself yesterday', 'That just wasn't the real me'.

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[14]   Charles S. Peirce, *The Essential Peirce: Selected Philosophical Writings*, ed. Peirce Edition Project (Bloomington: Indiana University Press, 1998), vol. 2, p. 20 (his emphasis).
[15]   Roy Bhaskar, *The Possibility of Naturalism: A Philosophical Critique of the Contemporary Human Sciences*, 2nd ed. (New York: Harvester Wheatsheaf, 1989), pp. 35, 81–82.
[16]   Lakoff and Johnson, *PF*, pp. 269–281.

A third version represents the true self as located somewhere unknown, which must be found: 'I've got to get in touch with myself'; 'He went on a journey of self-discovery', 'She found herself in teaching'.[17] Often these metaphors of the essential self involve images of the self as object, location, and person.

One might expect that the metaphors for the inner life vary significantly from culture to culture. Surprisingly, however, initial evidence indicates that this is not the case. Lakoff and Johnson discuss how the Japanese concept of the self differs radically from the Western one, yet the metaphors for the experience of inner life are remarkably similar. As Lakoff and Johnson point out, there isn't enough research yet to state that the metaphors are universal, but it's a tantalizing possibility.[18] If true, it would corroborate Archer's arguments for the universality of the sense of self, as distinct from the socially variable concept of self.

Lakoff and Johnson observe that 'these modes of conceptualizing our phenomenological experience of the Self do not entail that the structures imposed by these metaphors are ontologically real. They do not entail that we really are divided up into a Subject, an Essence, and one or more Selves'. In fact according to Lakoff and Johnson those notions conflict with scientific knowledge about the mind. Nevertheless the expressions appear to articulate *something* real about our experience of inner life. One reason for the difficulty is that the metaphors can contradict one another. Furthermore, it is unclear whether the qualitative experiences pre-exist and motivate the metaphors, or instead the qualitative experiences arise because conceptualizing our activities via these metaphors evokes certain affects.[19] Of course, both may be true, in a dialectical feedback.

I suspect that the reality behind the metaphors of self-experience is the phenomenological impact of error. Error forces one to acknowledge the TD/ID distinction. However, the error is only explainable if there is a self who can be wrong—but then, the self who thinks 'I was wrong' is applying the TD/ID distinction to her own selfhood, as present and past selves. Thus error begets reflexive self-monitoring, which is completely congruent with the foundation of all of these metaphors: the bifurcation of inner life into what Lakoff and Johnson call the Subject (perhaps better, the 'I') and one or more Selves.[20] The 'I' occupies the transitive dimension, existing always in the present tense; the Selves are representations of the 'I' which exist in

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[17] Ibid., pp. 268, 282.
[18] Ibid., pp. 284–287.
[19] Ibid., pp. 288–289.
[20] Ibid., p. 268.

the intransitive dimension. Being intransitive, Selves are distanced from the 'I', a dynamic that readily maps onto the image schema of objects in space which the 'I' can observe and act upon; the objects can themselves act; the 'I' can be observed and acted upon; or the objects are other persons with whom one can identify, confer, or struggle.

Cognitive science has revealed image schemas of various sorts. Lakoff and Johnson focus mainly on image schemas which emerge from individual kinesthetic experience; since human bodies are basically similar, people throughout the world have most of these schemas in common, even if they apply them differently. However, Lakoff and Johnson also discuss image schemas that arise through social experiences. From the examples they offer, 'social' here has two senses: the aggregate of many individuals' embodied experiences with commonplace objects or activities that are sociohistorical products, as in 'the mind is a machine' ('They're spinning their wheels' or 'I'm a bit rusty'); or relational experiences that depend on personal interactions or social institutions ('Time is money'; 'Hey, big daddy!'). I will explore some of these later.

As we will see, whether we're speaking of basic concepts such as interiority and pathway, or reasoning structures such as syllogisms, or even entire philosophical systems, virtually all of our thoughts, perceptions and knowledge build upon image schemas. The point cannot be understated: image schemas and metaphors thoroughly pervade our thinking even in our grammar; and far from being handy but not strictly necessary, they are an inextricable part of the cognitive unconscious and are constitutive of thought and meaning themselves.[21] Consequently, when we consider the transitive dimension as the social production of knowledge and recognize the pre-theorized character of perception, we must ascribe such pre-theorization in part to image schemas and embodiment. However, it is vital to recognize that the crucial role of image schemas and metaphors in the thought process does *not* imply that metaphors can be applied freely, that knowledge is simply relative culturally, or that all we can know are metaphors. Since image schemas emerge from human interactions with the real, material world, their applicability is also constrained by that world (including the body's own physiology). Metaphors often establish genuine knowledge of reality, and help us to determine how (and whether) the billions of perceptions we form every moment are meaningful.

Cognitive science's case for the fundamental role of imagery in thought meshes with Peirce's semiotics, which holds that icons are deeply involved in symbolic signs such as words: symbols, he says, 'come into being by

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[21]   Ibid., pp. 16–59, 161–166, 247. See also Lakoff, *WFDT*, pp. 281–292.

development out of other signs, particularly from likenesses or from mixed signs partaking of the nature of likenesses and symbols. […] Now every symbol must have organically attached to it, its Indices of Reactions and its Icons of Qualities'.[22] I've argued elsewhere that Peirce's semiotics fits well with critical realism;[23] cognitive science buttresses that connection.

One shortcoming of the Lakoff/Johnson theory is that the metaphors and image schemas they analyse often appear as givens. For example, the metaphor 'theories are buildings' does indeed underlie many phrases, such as 'theory-construction', 'build a conceptual framework' and 'the evidence buttresses that assertion';[24] but why do we generally choose buildings rather than cakes, sewing projects, or farming? Clearly there are social determinants behind this and many other metaphors and image schemas. While Lakoff and Johnson acknowledge such social determinants and maintain that one key aspect of image schemas is their shared, public character, they never delve into the nature of social and cultural determination, and they derive the shared and public character of image schemas primarily from the human body.[25] This gap raises a danger of essentialism, or at least a kind of decontextualization. To avoid that danger, ultimately their analysis must be incorporated into a more socially oriented theory.

Later in this article I will sketch a social theory addressing the emergence of one particular class of metaphor. At the moment, however, I want to consider cognitive science's standing as a possible critical realist research program. We need to gauge how readily critical realism can accept not only cognitive science's findings, but also the philosophical edifice built upon them; and that judgement in turn indicates how strongly those findings may affect critical realism itself. Lakoff and Johnson's philosophy of embodied realism is not as extensively developed as critical realism, but it does share the same basic tenets: the material world exists and knowledge about it is possible (even if imperfect); knowledge is not absolute but rather relative to modes of human interaction with the world (sociohistorically conditioned in critical realism, kinesthetically conditioned in embodied realism); knowledge need not depend entirely on direct observations; reality is stratified; real entities have causal powers; and philosophy should be informed by the results of scientific research. These views show that embodied realism is consistent with the major elements

22   Peirce, *Essential Peirce*, vol. 2, p. 10; vol. 2, pp. 193–194.
23   Tobin Nellhaus, 'Signs, social ontology, and critical realism', *Journal for the Theory of Social Behaviour* vol. 28, no. 1, 1998, pp. 1–8.
24   See Johnson, *Body in the Mind*, p. 105.
25   Ibid., pp. 175, 190.

of 'basic' critical realism (what Bhaskar calls 1M) to such an extent that for present purposes any philosophical differences need not detain us.[26]

Lakoff and Johnson don't articulate a theory of generative mechanisms, but it is implied throughout their discussion of image schemas and related entities. In particular, when they declare that these things are real, they make an express ontological commitment to their existence as structured entities with causal powers that can generate certain inferences, understandings, and even actions.[27] In critical realist terms, then, image schemas are generative mechanisms. That, however, allows us to shore up a weakness in critical realism itself. For while Bhaskar notes that 'regarding people as material entities with emergent powers resolves the mind-body problem' and rejects mind-body dualism,[28] he doesn't get much farther than such declarations of principle. But cognitive science allows us to trace in deeper detail the emergence of mind from embodiment via image schemas, an approach that sustains stratification and emergent powers materialism. Although many issues have yet to be resolved, the assertion of the integrity between mind and body can move beyond abstract philosophical argument toward a theory supported by the convergent evidence from several sciences which are explaining the relationship in ever-increasing detail— a transformation akin to supplanting a generic belief that something in metals' essential nature accounts for their varying properties, with an understanding of the atomic and molecular structures that establish those powers. This is the founding but by no means final implication of cognitive science for critical realism.

2. *Metaphor as Generative Process*

Cognitive science traverses critical realism along a second edge: the latter's understanding of cultural production, including theorization as a process and the function of metaphor in scientific theory. In the 'big picture', various social structures and intergroup dynamics shape cultural activity, but in this section I am looking only at the role of image schemas in ideation,

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[26]   Lakoff and Johnson, *PF*, pp. 89–117, 551–552. They do have various problematic claims regarding, for example, the elimination of the 'metaphysics-epistemology split' (*PF*, p. 114), but in context this appears to be a rejection of empirical realism, not a denial that epistemology and ontology are distinct. Another area needing further analysis is the operation of reference.
[27]   Ibid., esp. pp. 109, 115–117.
[28]   Roy Bhaskar, *Plato Etc.: The Problems of Philosophy and Their Resolution* (London: Verso, 1994), pp. 35 [qtd.], 101–103, 187–188, 205.

with my focus now on consciousness. Critical realists need to consider the role of image schemas not just within particular thoughts and expressions, but also in the ongoing and one might say (with Bhaskar) rhythmic exercise of cognition. This depends on a power of concepts: 'their inferential capacity, their ability to be bound together in ways that yield inferences'.[29] By generating inferences, concepts (or concept-relations) exercise causal powers.[30] Among the inferences are metaphorical entailments—ways in which an image schema may be elaborated and applied metaphorically. For instance, the 'containment' schema can entail notions of protection from external forces, restraint of forces within the container, relative fixity of location, presentation for or blockage from view, and transitivity (if A is inside B, and B is inside C, then A is inside C). Likewise, the metaphor 'love is a journey' entails the ideas that a romantic relationship can make progress, lose direction, get stalled, move too fast, hit a bump in the road, reach a crossroads, and so forth: all things that can happen on a journey, which is an advanced metaphor describing personal experiences over time.[31]

Metaphors about some thing are not necessarily exclusive. Different metaphors can evince different aspects: the metaphor 'love is a physical force' ('they were very attracted to each other', 'she bowled him over') expresses the power of romantic or sexual feelings, often entailing the idea that people can't resist that force or can do so only with great difficulty. Other metaphors commonly embedded in talk about love and desire include heat, food, games, and insanity. Complex realities, experiences and abstractions often require a multiplicity of metaphors, and thought specifically about subjective experiences (reflexivity) rarely occurs without them. Primary metaphors with a direct tie to embodied experience are frequently combined to form complex metaphors with no direct embodied parallel. 'Love is a journey' combines several primary metaphors, such as 'purposes are destinations', 'actions are motions', and 'a relationship is an enclosure' (here, imagined as a vehicle). Rich arrays of entailments arise from complex metaphors like this.[32]

Again, this is not to say that thought consists of a metaphoric free-for-all. Literal meanings play an essential role in subjective experience. Terms for sensorimotor experiences and ordinary physical objects are literal, the perception 'these two colours are similar' is literal, and so forth. It is much harder to be literal about abstract reasoning processes (including

[29]   Lakoff and Johnson, *PF*, p. 20.
[30]   See ibid., pp. 116–117.
[31]   Johnson, *Body in the Mind*, p. 22; Lakoff and Johnson, *PF*, pp. 64–69.
[32]   Lakoff, *WFDT*, pp. 60–65, 409–415.

reflexivity), and generally we adopt image schemas as metaphorical maps for conceptualizing the abstraction as a whole. So, for example, we often think about similarity (as such) via the metaphor of physical proximity. We readily apply that model to specific instances: 'these two colours are close'.[33] But even when describing abstractions, metaphors have a literal element: embodiment necessarily involves interaction with the world in ways that constrain meaning and shape it in specific ways. Since image schemas are the human mind's way of having contact with reality, not any metaphor will serve for describing entities: the metaphor must adequately describe at least some of the entity's properties, and in fact, if it failed to correctly identify any aspect of the entity whatsoever, then it would also fail to be a useful metaphor. 'Colour is a journey' is probably a non-starter.

The flip side, however, is that metaphors—including unlikely metaphors—can produce new and unexpected insights or even knowledge. A metaphor may be 'an ornate expression of similarities and analogies its author was already aware of', but a *generative* metaphor 'is the *source* of new perceptions of similarity and analogy, picking out similarities and analogies that were unknown until the metaphor pointed them out and thereby brought them to the author's attention'.[34] Generative metaphors are key to enabling a person to conceptualize real and hypothetical unobservables.

The insight often consists in the application of a new image schema to existing perceptions (rather than new information) which may well have been previously interpreted according to one or more other metaphors. These new understandings may arise unexpectedly in a kind of 'Eureka!' moment, a situation which makes the unconscious character of image schemas manifest. The idea seemingly comes from nowhere, out of nothing; and in a way it does, since a new insight cannot simply be inferred from what pre-existed it. Particularly fertile soil for new thought is of course found in those fields of study where few have investigated or problems are ripe and the investigator confronts a morass of information but no obvious way to connect it all; sometimes it involves 'forgetting' one's previous view in order to get a fresh perspective. A newcomer to a field is often in a similar situation. Very likely the insight results from semi-conscious pattern-seeking which encounters a particular image schema that fits enough of the information at hand to provide an explanatory theory. The process is semi-conscious, since one knows that one is seeking a pattern, often one has a sense of the sort of pattern needed and may thumb through other people's

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[33]   Ibid., pp. 58–59.
[34]   P.A. Lewis, 'Metaphor and critical realism', *Review of Social Economy* vol. 54, no. 4, 1996, p. 493; Lewis's emphasis.

work looking for clues, but frequently one has to go do something else, let the mind clear, and allow the unconscious thought process to take over. The metaphoric application of the image schema systematizes the information, establishing a new paradigm for understanding the object of study.

The presence of literal elements does not mean that knowledge can always be reduced to or wholly translated into literal terms. What cannot be reduced is what makes understanding different from simply possessing information: a way to organize the information, put it into a context, conceptualize what it represents. In the absence of such relationships the bits of data are lifeless (a telling metaphor, pointing toward the connection between comprehension and embodied experience). In more Bhaskarian terms, the absence of interrelationships among the data must itself be absented in order to turn data into knowledge. Introducing image schemas and metaphors is the primary way to accomplish that.

Primary image schemas, their metaphoric applications, their combinations with other image schemas, and the myriad entailments that all of these generate form vast and intricate networks of iconic cognitive structures that permeate and stimulate reasoning, a process which proceeds not simply or even primarily through propositional logic, but by consistency between an object and its analogue. The pursuit of metaphoric consistency is essential to two modes of cultural elaboration: innovating by taking ideas from one realm and applying them to another, independent realm, a strategy which Archer terms 'contingent complementarity'; and systematization, which operates according to 'concomitant complementarity', that is, corroboration among ideas that are necessarily associated.[35] The two modes differ insofar as 'contingent complementarity' arises from sociological dynamics, whereas 'concomitant complementarity' is imposed by necessary logical relationships. However, at issue in the present discussion is the nature of conceptual complementarity itself—how we know that two ideas are complementary in any sense. Perceiving metaphoric consistency is one major way to discover complementarity among ideas.

In the course of discussing these modes of cultural elaboration, Archer notes the connection between systematization and Kuhnian paradigms; however, she holds the latter idea fully at arm's length. But granting that Kuhn's concept of 'paradigm' occasionally slides ambiguously between a conceptual framework and a sociological dynamic, it is important to observe the centrality it gives to a basic model or image. That image is

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[35] Margaret S. Archer, *Culture and Agency: The Place of Culture in Social Theory* [*CA*], rev. ed. (Cambridge: Cambridge University Press, 1996), pp. 153–154, 171–177, 219–224, 235–239, 258–262.

not necessarily exclusive: light can be understood as consisting of particles *or* waves, each model successfully explaining part of light's behaviour. Bhaskar too has emphasized the role of models within scientific theories, suggesting that they are indispensable for the production of explanations: 'what is required for a genuine explanation is the introduction into the explanatory context of new concepts and ideas, not already (explicitly or implicitly) contained in the explanandum, such as *models* picturing plausible generative mechanisms for the production of the phenomena concerned', and such models 'can come to be known to denote newly identified […] levels of reality'.[36]

Consequently we must read with a grain of salt when Bhaskar writes, 'upon what substantive scientific analogy does transcendental [i.e., critical] realism depend? The answer is, I think, none'.[37] Perhaps critical realism isn't modelled on any *particular* scientific theory, but it is far from lacking analogies and images. On the contrary, it is positively rife with them: structures (architecture), generative mechanisms (machinery, especially engines), powers (forced movement, such as pushing or pulling with one's arms), stratification (geology), and so forth. Nor could it be otherwise.

Models and metaphors organize all levels of abstraction. Lakoff and Johnson lay out the metaphorical underpinnings of various philosophies on a range of topics (time, causality, mind, self and morality), and the work of several thinkers (the pre-Socratics, Plato, Aristotle, Descartes, Kant, analytic philosophers, Chomsky, and rational action theorists). In fact, they demonstrate that syllogistic logic is itself founded on the metaphors 'categories are containers' and 'predication is containment': if all A are B (A is inside B) and C is an A (C is inside A), then C is a B (C is inside B)—a relation easily portrayed through the concentric circles of a Venn diagram.[38] In short, when we turn our attention to the ongoing process of cognition, we find that images are fundamental to all cultural elaboration and scientific theorization.[39]

Cognitive science provides empirical support for the argument that theory emerges from practice, but it refines that assertion by stipulating

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[36] Bhaskar, *Plato, Etc.*, pp. 20, 21, his emphasis; see also Bhaskar, *RTS*, pp. 159–163, 166–168, 194.
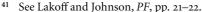[37] Bhaskar, *RTS*, p. 244.
[38] Lakoff and Johnson, *PF*, pp. 380–382.
[39] See also Rom Harré, *The Principles of Scientific Thinking* (Chicago: University of Chicago Press,1970), pp. 28, 34–60, 260; Russell Keat and John Urry, *Social Science as Theory*, 2nd ed. (London: Routledge & Kegan Paul, 1982), pp. 32–36; José López, 'Critical realism: the difference it makes, in theory', in Justin Cruickshank, ed., *Critical Realism: The Difference It Makes* (London and New York: Routledge, 2003), pp. 80–84. For an analysis for how metaphor operates in scientific theorization, see Lewis, 'Metaphor'.

that this occurs fundamentally through the intermediary of sensorimotor and social experience—from another perspective, the *interaction* between agential embodiment and intentionality. Metaphoric imagery is at the heart of the process, the link that makes it possible. Image schemas provide the means by which we are able to conceptualize objects of investigation that we cannot perceive directly, including relationships among things that we *can* experience directly. The mediated connection between knowledge and practice reveals the emptiness of the ontic fallacy (according to which knowledge is directly determined by being), but also the need in most situations to test various metaphors for adequacy and suitability to their object. It also provides qualified support for the claim that there is no theory-free perception: while the role of image schemas in cognition does not demonstrate that all aspects of sensory experience are mediated (the constraints upon schema-formation suggest that some aspects are directly affected by extra-mental powers) image schemas are clearly involved in conscious categorization and conceptualization. Thus they are integral to epistemological relativism, without undermining judgemental rationality.

3. *Culture as Partial Totalities*

The third level on which cognitive science enriches and concretizes critical realist philosophical positions is the concept of culture—culture as a totality of ideas, values, beliefs, images, feelings and attitudes that develops historically and in dynamic relations with various social structures. Critical realism has typically defined culture in a rationalist manner. Archer, for example, defines the 'Cultural System' in terms of the *logical* relations of consistency, inconsistency or independence among cultural elements. She relegates myths, symbolism and the like to the agents' socio-cultural interactions and interpersonal influence.[40] Archer is correct that logical relations implicitly and necessarily pertain among cultural elements, and that logical relations must be distinguished from causal relations. However, she underestimates the important of *analogical* relations among cultural elements; more fundamentally, as we have seen, logical relations themselves have metaphoric foundations in image schemas gleaned from embodied relations with the world. Logical relations, then, are not pure of the body.[41] Recently Archer herself has brought a greater awareness of and

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[40]   Archer, *CA*, pp. 103–142; Margaret S. Archer, *Realist Social Theory: The Morphogenetic Approach* [*RST*] (Cambridge: Cambridge University Press, 1995), pp. 179–181.
[41]   See Lakoff and Johnson, *PF*, pp. 21–22.

role for embodiment into her concepts of culture and agency, including a sense of how sensorimotor experience generates the principle of non-contradiction, but she considers only the basic fact of embodiment and does not pursue the way embodiment permeates the details of cultural activity.[42]

However, the existence of logical and analogical relationships among cultural elements does not necessarily entail that Archer's Cultural System is in fact a system—that is, a coherent structure in the critical realist sense—rather than an agglomeration of conceptual and experiential flotsam and jetsam, or 'blobs' of various types and sizes. Clearly individual cultural works are structures, otherwise all efforts at interpretation would be arbitrary. So the question is whether the sum of all cultural creations constitutes a single enormous structure. Most of us certainly speak as though more-or-less coherent cultural blobs exist, when we use phrases such as 'Navajo culture', 'Southern (US) culture' or 'hiphop culture'. Archer, in contrast, holds that the Cultural System consists of the entire corpus of existing intelligibilia, and therefore there is one and only one Cultural System, and the only valid use of the plural is to refer to Cultural Systems across time; otherwise, she asserts, the concept of cultural systems will quickly devolve into a radical relativism of incommensurability and untranslatability among cultures.[43] Her concern is legitimate, yet her argument is oddly unhelpful, akin to maintaining that the Earth has only one geographical area since its entire surface is connected. It's true that the oceans, fields and mountain ranges are all part of one planet, but nevertheless they form ecosystems which must be understood as distinctive.

Archer comes to her assessment by arguing that the mere fact of intelligibility is what makes an entity part of the Cultural System and the Cultural System a single system; moreover, being intelligible means being expressible in (or at least translatable into) a common language. (This is part of her rationalist definition of culture.) She specifically identifies language as the crucial component of the Cultural System, the one in fact that makes it a system.[44] But that is undercut by Archer's own subsequent finding that language is but the culmination of the ontogeny that constitutes the sense of self and otherness, and is founded on practical embodied activity (and for that matter, on language as practical action). Consistent with the argument presented here, she describes practice as 'the wordless source of reason': 'there is a genuine primacy of practice which yields reasoned knowledge

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[42]   Archer, *BH*, pp. 121–190.
[43]   Archer, *CA*, p. 104.
[44]   Ibid., p. 104.

non-discursively and which also underlies practical proficiency in the linguistic domain. […] [P]ractice is the *fons et origo* of language and of the discursive domain in general.'[45] Language succeeds as a system for reasoning due to its grounding in embodied interactions with the world, and reasoning can occur without a person having words to articulate it. Consequently, language as such is *not* the lynchpin of culture: that role belongs to image schemas, which structure our perceptions and ideas in ways that enable us to reason about them, and give us tools to carry out that reasoning.

Archer also seems to assume that if one asserts that multiple cultural systems exist simultaneously, one must believe that such systems form closed totalities. Only with such closure could incommensurability and untranslatability among cultural systems occur. But the possibility of translation does not require the existence of only one Cultural System, that is, the elimination of plurality. Instead, it only requires eliminating the assumption of closure. Cultural systems are open, *partial* totalities, possessing 'external in addition to internal and contingent besides necessary connections'.[46] On the one hand, the presence of both contingent and necessary connections matches Archer's analyses of contingent and concomitant modes of complementarity, and competitive and constraining modes of contradiction. On the other hand, the presence of external as well as internal connections explains the possibility of translation among cultures, and influence that social dynamics exert upon cultural development. Chief among those external connections are the connection to the body, and embodied interactions with the world of nature, people and human artefacts. Culture's connection to the body provides a relatively constant touchstone: human bodies have only minor variations across cultures, and basic sensorimotor activities (entering, exiting, lifting, eating, feeling hot and cold objects, and so forth) are, one might say, 'topologically' identical among all people. But embodied interactions with the greater natural, interpersonal and artefactual world are subject to wider variety. Thus differing contexts and relationships offer some explanations why translation is sometimes imperfect, whereas the underlying similarities provided by the body are a reason why translation is generally successful. It also indicates that people's intuition that there are cultural blobs is basically correct: these blobs grow out of regional, generational, and sociological commonalities.

Logical and analogical relations constitute the principal internal connections within any cultural system, but there are also historical relations (such as, in Archer's example, the Catholic Church's Greco-Roman her-

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[45]   Archer, *BH*, pp. 135–136, 145, 151 (emphasis removed).
[46]   Bhaskar, *DPF*, p. 405.

itage) and sociological relations (e.g., the way that members of a particular social group typically share tastes in music, books, movies and food, as Bourdieu has described). However, historical and sociological relations within cultural systems clearly involve contingent (causal) external connections, in contrast with the internal connections of logical necessity and analogical consistency. In some cases, sociological connections involve both causality and analogy: for instance, a social group's relative freedom from performing manual labour might be analogically articulated in cultural forms by refined (smooth, clear and relaxed) bodily movement and gesture, abstract language, and so forth. This example reveals that social structures establish experiential parameters affecting a group's internal cultural development, which however always evolves partly in relation to other social groups and their cultural forms, often by distinguishing groups from one another. At the same time, some experiences may be shared by groups across the board, such as driving or riding in a car; these too provide image schemas for cultural elaboration. Thus cultural systems are structured inside and out, but the structures are flexible, porous, and dynamic.

A cultural structure not only is the product of structuring by external and internal relations, it can also actively structure—it possesses powers that allow people to generate novel conceptual connections. As noted earlier, these links typically arise through the metaphoric application of an image schema to a set of perceptions or experiences in order to develop an understanding of it. The production of an interpretive metaphor is an instance of emergence, as Bhaskar defines that term: the new concept arises from the interactions of image schemas (which are pre-conceptual) with perceptions and/or experiences, and it possesses a *sui generis* power (to interpret or provide an understanding of something in the world) bearing logical and analogical properties. This power can be neither inferred from nor reduced to the underlying image schemas, perceptions or experiences. It can, however, help select and organize other perceptions or experiences in order to confirm and elaborate the understanding of the object in question, and possibly to extend it to other objects. Once formed, the interpretation can be taught, and may even become part of common knowledge.

One can also get a new concept by switching perspectives. Many image schemas have 'flip sides' or dialectical partners. Containment, for example, can mean protecting something from outside forces, or preventing something from getting out. A path approaches some goal, but it also departs from its origin. A force is exerted by some object; another object is subject to it. A figure always exists in relation to some ground, and one can shift focus from one to the other. Reversals of this sort are also possible with

more complex images and metaphors. As with other types of totalities, image schemas as cognitive operations involve reflexivity.

Of course, the image of totality itself accommodates various types of perspectival switches, particularly between the parts and the whole. As Bhaskar observes, a partial totality 'will in general be asymmetrically weighted and involve various degrees of attachment and detachment ("relative autonomy") of its elements'.[47] In short, one part is dominant. Examples include the motor of a car, the mind in the body, the economy in a social formation. Clearly in all such cases the dominant part's special role is contingent on various factors, and other parts may in certain circumstances wield greater importance: the fuel pump may break, a heart attack may cause death, a political upheaval may overturn economic relationships. Switching perspectives yet again, a particular totality may be contained within and conditioned by a more encompassing totality, such as environmental resources, conditions and events. This is connected to what Bhaskar calls 'constellationality', in which one term is either contained within (and generally emergent from) or else necessarily bound with another. Among his examples is the constellational containment of epistemology within ontology. As cognitive science has shown, the mind is constellationally contained in the body, in ways that deeply shape cognition processes.[48]

Within the cultural domain, which is structured by countless logical and analogical relations founded on various image schemas and metaphors, particular images and metaphors may become dominant. So, for instance, during the 1950s the image of containment was key in American culture.[49] This is a form of cultural hegemony, albeit a diffuse one. The dominance of particular metaphors may be demonstrated by their frequent appearance, their incorporation within more complex metaphors, and their assumption within various conceptual flip sides and reversals. However, the cause of that dominance lies in large part beyond the cultural domain itself. Precisely because cognition emerges from embodiment, including both sensorimotor and social experiences, the cultural dominance of some set

[47] Bhaskar, *DPF*, p. 127.
[48] On asymmetry and contextuality in totalities, see Bhaskar, *DPF*, p. 127. On constellationality, see *DPF*, pp. 114–115, 271–273.
[49] Bruce McConachie, 'Metaphors we act by: kinesthetics, cognitive psychology, and historical structures', *Journal of Dramatic Theory and Criticism* vol. 8, no. 2, 1993, pp. 23–45; Bruce McConachie, 'Approaching performance history through cognitive psychology', *Assaph* no. 10, 1994, pp. 113–122; and Bruce McConachie, 'Doing things with image schemas: the cognitive turn in theatre studies and the problem of experience for historians', *Theatre Journal* vol. 53, 2001, pp. 569–594.

of metaphors is constellationally contained within and conditioned by social structures and practices. In other words, if society conditions what people do, then the way they think is in part the result of social structures.

What social structures establish the dominance of certain metaphors, and in what sense are they dominant? The best-known theory of a socially dominant structure is the marxist one of an economic base that conditions a political and ideological superstructure. However, marxism has been less clear about the source of relative autonomy. The problem can be resolved by examining these realms from a more totalizing point of view as practices. For example, economic practice primarily depends on material and human resources, and its goal is principally the production of material goods and services. However, to take place, it requires some type of communication. Communication principally concerns the creation and reception of meaning; yet it cannot occur without some type of material activity, such as the production of sound, marks on paper, light on a screen, and so forth.[50] Communication (and thus culture) obtains relative autonomy because it aims to produce meaning, and because it depends upon the materiality and uses of the means of communication. However, the 'primacy of practice' thesis tells us that these two sources are not of equal weight: the social use and development of the various means of communication—the 'communication framework'—provides the conditions under which meaning is produced and understood.

I use the term 'communication framework' rather than 'communication structure' because the latter more properly refers to the social use and development of a single means of communication (say, printing), in the context of all the others. In contrast, the communication framework includes a society's entire ensemble of communication structures, and forms a partial totality consisting of these unequally weighted substructures.[51] Moreover, the communication framework plays the central role in organizing the cultural domain and establishing certain metaphors' dominance. The communication framework has this role because it consists of the production and dissemination of meaning, and image schemas are constitutive to meaning itself. In other words, beyond the experiences gained in directly encountering the physical world, it is the embodied practices involved in producing meaningful expressions for other people (spoken

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[50]   See also Nellhaus, 'Signs', pp. 15–17.
[51]   Tobin Nellhaus, 'Social ontology and (meta)theatricality: reflexions on performance and communication in history', *Journal of Dramatic Theory and Criticism* vol. 14, no. 2, 2000, pp. 3–39. Only in a purely oral culture would the communication framework and the (one) communication structure be the same.

words, writing, painting, and so forth) that generate the fundamental image schemas and metaphors structuring the cultural sphere. Metaphors that gain prominence due to the operation of other social structures (such as politics, economics, or gender) do so within that overarching cultural context, or if you prefer, on top of that conceptual foundation. Consequently, cultural change occurs in a stratified manner: upper levels can change without fundamentally altering lower ones (though perhaps introducing some moderate adjustments), but when lower levels transform, upper ones are forced into major upheavals, often leaving cultural relics behind.

In summary, while culture is in one sense everything that is intelligible, as Archer claims, this interpretation does not take critical realist analysis very far toward understanding the depth and intricacy of the cultural realm. Culture must be viewed as a partial totality consisting of many partial totalities, each open to external forces and possessing a highly complex internal and dynamic structure. Moreover, it is organized not only by logical relations among terms, but more extensively by analogical relations, which have their cognitive basis in sensorimotor experience and obtain an underlying systematization and hierarchization from various socially-based practical activities, most importantly communication.

4. *Communication and Concepts of Agency*

The fourth dimension of cognitive science's significance for critical realism concerns the concept of agency. Bhaskar regularly refers to 'embodied intentional agency'. Cognitive science not only supports this concept, but also demonstrates that agency is not an aggregation of discrete qualities or powers (embodied + intentional + agential) but instead is a complex dynamic unity, in fact a partial totality. Cognitive science vigorously underscores the 'embodied' part and elucidates the role that embodiment plays in intentionality as well as the ability to act. Lakoff and Johnson's concept of the embodied person is highly pertinent here, and I'll quote only its most immediately salient points:

> Conceptualization Only Through the Body: We can only form concepts through the body. Therefore, every understanding that we can have of the world, ourselves and others can only be framed in terms of concepts shaped by our bodies. [...]

> Embodied Mind: Because concepts and reason derive from, and make use of, the sensorimotor system, the mind is not separate from or independent of the body. [...]

Metaphorical Reasoning: Conceptual metaphors permit the use of sensorimotor inference for abstract conceptualization and reasoning. This is the mechanism by which abstract reason is embodied.

Abstract Reason: By allowing us to project beyond our basic-level experience, conceptual metaphor makes possible science, philosophy, and all other forms of abstract reasoning. […]

No Universal Ends-Means Rationality: Because we think using multiple metaphors and prototypes, there is, in most cases, no clear and unequivocal 'self-interest' for a person that can be maximized. Thus, there is no objective Universal Ends-Means Rationality that can always calculate how to maximize that which typically does not take a clear form—one's supposedly objective 'self-interest'. Thus, people cannot be self-interest maximizers. […]

Embodied Will: Since reason is embodied, and since will is reason applied to action, our will cannot transcend the constraints of the body. […]

The Pluralism of Human Moral Systems: Because each person's conceptual system contains a multiplicity of moral metaphors, some of which are mutually inconsistent, we each have within us a moral pluralism. […]

Human Nature Without Essentialism: Cognitive science, neuroscience and biology [characterize] the nature of human beings […] in terms of variation, change and evolution, not in terms merely of a fixed list of central features. It is part of our nature to vary and change.[52]

Many of these points have been made previously through philosophical arguments; however, the distinctive element is cognitive science's gathering of evidence supplied by several different scientific fields to support these claims and connect them together. For example, objection to the 'rational actor' theory and the unveiling of underlying metaphors associated with deconstruction become linked by the role of embodiment in reason.

Lakoff and Johnson don't really unpack their notion of 'embodied will', but I can raise a few thoughts. Clearly, our ability to execute actions is limited by our bodies whether reason is embodied or not. However, in general we tend to imagine freedom and free will in terms of freedom of motion,[53] including freedom of speech, the absence of which is paradigmatically pictured as a gagged and therefore unmoving mouth. We typically imagine doing some things we can't actually do (such as fly by flapping our arms) by extending experiences we *have* had (such as the moment of moving freely through the air when jumping). But an 'intention' to do other things beyond our native capabilities requires applying experiences

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[52]   Lakoff and Johnson, *PF*, pp. 555–557.
[53]   Ibid., p. 305.

in a wholly metaphoric manner: for example we might imagine sensing magnetic currents by analogizing it to feeling pressure or vibration. Since the ability to imagine actions we might undertake—an integral part of will—is constrained by embodied experience, the will itself must be.

But the will, and agency as a totality, are not merely embodied in a general sense: they are structured in part by particular image schemas which may vary from culture to culture, establishing socially specific concepts of agency. To analyse this structuring, we must untangle certain ontological elements of the self, and put them in relation to sociohistorical ideas or understandings of selfhood. As Archer argues, humans are simultaneously *persons*, who develop a personal identity and qualities of self in the course of their interactions with the natural, practical, and social realms; *agents*, who occupy positions or roles within the social system of resources and practices; and *actors*, who play each of their agential roles in their own manner and to their own degree of accomplishment.[54] We can connect Archer's distinctions to the image-laden experiences of self. The images that Lakoff and Johnson present (self as object, location, person and/or essence) are all on the level of the person, where they articulate aspects of the self-reflexivity. In general they seem to bear relatively little normative content. In contrast, the self as actor, as one who performs social roles, in part acts according to images, models or even stereotypes of the given roles. Those images are generally more elaborate and discursive than image schemas, and also more clearly social constructs, such as the norm of the 'good mother' or the movie character-types that may (unconsciously or consciously) guide people's behavioural styles.

But in order to examine the images underlying concepts of agency, I must reject Archer's position that agents are strictly collectivities (either aggregative or organized), not individual people.[55] Instead I take Bhaskar's view that agents are intentional and embodied beings, which implies that they must be individuals. It is difficult to see how agency could even be exercised without individual embodiment. Likewise, agency must involve intentionality. Arguably, organized groups and institutions are agents possessing a kind of intentionality and embodiment. But one cannot ascribe any sort of intentionality to demographic aggregates that share life-chances. The latter are often social forces, but (*pace* Archer) they are not fully agents. Agency should refer principally to individuals' (and per-

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[54]   Archer, *RST*, pp. 247–293.
[55]   Archer, *RST*, pp. 257–258; Archer, *BH*, p. 263. Archer seems to step away from this stricture in 'The private life of the social agent: what difference does it make?', in Justin Cruickshank, ed., *Critical Realism: The Difference It Makes* (London and New York: Routledge, 2003), pp. 17–29.

haps organizations') power to exist, be affected, choose and *act* within the networks of social relationships, structures and collectivities. That power carries practical and ideational aspects as well as social ones, and in the present section I am addressing specifically the ideational aspects— people's concepts of the self in relationship with other people, with particular social groups, and with society as a whole. Here we find the socially and culturally variable concepts of self, as distinct from the sense of self. Image schemas and metaphors are embedded in those concepts.

For example, the characteristically Euro-American notion of individualism emerged during the Renaissance, and contrasts with the concept of moral types that was dominant during the Middle Ages. The latter is associated with a great chain of being: the idea that people are arranged in ranks bearing a hierarchical relationship of dependence and perfection, culminating in the absolute perfection and self-sufficiency of God. A person's quality was bound up with her rank, which was a matter of outward, public knowledge and recognition. Individualism, in contrast, posits a horizontal relationship among people, as being fundamentally independent and equal. They possess individual will and are wholly responsible for themselves. Their value or quality is sometimes reflected in their public accomplishments, but ultimately belongs to their inner moral worth. Agency is posited in or derived from the individual's inward development and psychological response: the self is constituted by subjectivity, psychodynamics, inner depth. A number of images underlie these different conceptions of individual identity, including containment, outside/inside, and connected/separate; the individualist view clearly builds upon the idea of the 'essential' self outlined earlier. However, where my previous discussion of the metaphors of selfhood emphasized the plurality of such metaphors at the level of personhood, when we consider the issue of the individual's relationship to the social world—concepts of agency—we find that one metaphor system tends to dominate.

Different sorts of embodied practices converge to favour one concept of agency. But which are responsible for modern individualism? A familiar explanation is that it is from the increasing division of labour under capitalism. However, the division of labour by itself would more likely foster a kind of group orientation than individualism.[56] The most plausible economic explanation for individualism is instead competition—but there are different forms of individualism, and competition often promotes extroversion (with or without a notion of psychological depth), so we

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[56]   Jack Goody, *The Domestication of the Savage Mind* (Cambridge: Cambridge University Press, 1977), p. 14.

must look further to understand the forces behind the sense of interiority that characterizes post-Renaissance individualism. Another possibility, which I can only outline here, is that deep individualism derives from communication practices, and specifically from print culture.

During the late Middle Ages, silent reading became commonplace in the ecclesiastic realm and increasingly among the aristocracy as well. With it came greater privacy of thought and emotional experience, encouraging everything from intellectual independence and heresy, to intensified orthodox devotion and spirituality as the reader sought communion with Divinity within herself, to sexual fantasization.[57] With printing, silent reading spread throughout society. As writing and especially reading became increasingly solitary and silent, the reader came to view the world from isolation, whether from a personal perspective opening into a world of individual sensibilities and interpersonal interactions, or from an abstract, Archimedean viewpoint examining the natural world of objects.

Compounding the shift to silent reading was a revolution in the role of writing. The printed text took an increasingly dominant function in everyday operations of life, administration, law, leisure, and so on. A key indicator of the change can be found in jurisprudence: during the Middle Ages oral testimony and memorial objects were preferred over always forge-able writings; in contrast, with printing the validity of legal claims increasingly depended on documentary evidence.[58] Fundamentally, truth was now to be found in writing. This idea is considerably broader than the truth accorded to the Bible, Augustine and Aristotle during the Middle Ages, which derived from the authority of their authorship bestowed on them by God or the accolades of generations; and in most other respects, medieval culture had a decidedly oral character. However, by the early eighteenth century the truth borne by writings had begun to reside in their very textuality. People relied on documents of all sorts to ascertain agreements, establish precedents, determine sources, provide evidence, offer best examples, and serve similar veridical activities. The neo-classical emulation of classical writers' *styles* is another instance of the new weight given to textuality.

The argument that texts had become central to knowledge is supported by the intellectual history of epistemology during the seventeenth and especially the early eighteenth century, such as in the work of John Locke.

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[57] Paul Saenger, 'Silent reading: its impact on late medieval script and society,' *Viator* vol. 13, 1982, pp. 399–403, 412–414.
[58] M.T. Clanchy, *From Memory to Written Record, England 1066–1307* (London: Edward Arnold, 1979), pp. 23–24, 50–57, 203–207.

For Locke, complex ideas were composed of simple ideas, just as (in his metaphor) letters combine to form words.[59] He constantly described the formation of ideas in terms of writing and printing. In arguing against the notion of innate ideas, he asserted that simply informing a person of the presence of 'native Inscriptions' did not 'print them clearer in the Mind, than Nature did'.[60] On the contrary, all ideas come from sensation and reflection, and a person 'has not any Idea in his Mind, but what one of these two has imprinted'.[61] Thus the mind at birth is 'white Paper, void of all Characters, without any Ideas'.[62] Perception is a kind of printing process, in which the external world makes its print upon the mind: print culture provided the image schemas modelling Lockean epistemology. In this epistemological process, the physical body was the perimeter where sensation entered (leading to perception and experience) and where reflection returned thought to itself.

The epistemological process that Locke proposed was necessarily individualistic. An individual's viewpoint formed the basis for interpreting the world and imposing some sort of order upon it. The private, solitary reader, denuded of sociality, became the model of the knowing Subject. Print, however, is a mode of public communication (publication). Textuality was understood as the foundation for public knowledge, the realm of universal truths and logical reasoning, in which nature's imprint on the mind through perception meant the two were always capable of perfect identity. Conversely, speech was for ordinary social affairs, and became increasingly the realm of individual feelings and expression. The voice, which comes from within the body, became associated with the notion of a unique and particular self deep within the bodily form, wherein lay emotions and desires. This division also fostered the formation of agents as psychological Subjects, Subjectivity being the interiorized seat of perceptions and passions. (One can also see here the roots of Romanticism.)

The notion that sensations print concepts upon the mind is an epistemological image schema. The idea that people are essentially isolated individuals whose social relationships are exterior accessories to their existence (everyone their own Robinson Crusoe) is an ontological image schema concerning the concept of agency; so too is the belief that our true selves are hidden deep within us, and that selfhood consists solely

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[59]   John Locke, *An Essay Concerning Human Understanding*, ed. Peter H. Nidditch (Oxford: Oxford University Press, Clarendon, 1975), § 2.7.10.
[60]   Ibid., §§ 1.2.7, 1.2.21.
[61]   Ibid., § 2.1.6.
[62]   Ibid., § 2.1.2.

of internal development. All three are of course images of containment, but more specifically, of being self-contained. In this regard what is striking is not (or not simply) the use of the containment schema, but that what is contained is one's self. This is different from the notion of a body possessing a soul. Agency is understood not outwardly, in terms of its relation to the social and divine order of things, but inwardly, in terms of an individual development and waywardness that identifies the person as 'unique'.

On this account, then, economic pressures such as competition and the division of labour undoubtedly contributed to the formation of individualism, but deeply interior, psychologistic individualism arose from the image schemas that emerged from print culture. More generally, the embodied practices used for communicating generate image schemas that carve societal concepts of agency. At the centre of those practices are the material aspects of knowledge production (writing, speaking) and consumption (reading, listening). Such activities establish epistemologies which construct concepts of the agent. Those concepts then shape agents' understanding of themselves and the world they live in, and become habituated not merely in agents' consciousness but also in their bodies and their behaviours. Concepts of agency, then, are not simply ideological in a functionalist sense, nor epiphenomena of the social relations of economic production, nor discourses unfettered by social and material structures: they arise principally through embodied experience of communication, ultimately shaping the very experience of agency and selfhood, and providing foundations for (in this example) individualistic and psychologically-oriented relations with the world.

This is one reason why Bhaskar's definition of the third ontological domain as the subjective raises several problems.[63] The 'subjective' in its strictest sense refers to the idea of a coherent, deeply interiorized and individualized self which possesses a will and is the origin of action and knowledge. That concept, however, is socially conditioned and historically circumscribed. Though it may be highly valued today, the particular set of concepts and assumptions that form 'subjectivity' simply did not occur before roughly 1600, and until recently applied only within Euro-American cultures: there are other concepts of self and agency.[64] An understanding of cognitive science, and how image schemas underpin concepts of agency

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[63]   See Bhaskar, *DPF*, p. 393. Originally Bhaskar called the third domain the empirical; this is now subsumed within the subjective.
[64]   Timothy J. Reiss, *The Discourse of Modernism* (Ithaca, N.Y.: Cornell University Press, 1982), pp. 27–34, 55–107; Jean-Pierre Vernant and Pierre Vidal-Naquet, *Myth and Tragedy in Ancient Greece*, trans. Janet Lloyd (New York: Zone Books, 1990), pp. 29–84.

and self, will help avoid the inadvertent importation of Eurocentric ideas into critical realism.[65]

In empiricism and conventionalism, the process of learning and knowing is one of 'reading the signs' in, on, or constituting the object itself, be it the 'book of life', the 'social text', or the 'agency of the letter in the unconscious'. When print culture makes textuality the source of knowledge, it invites the conversion of all things into texts—the linguistic fallacy. But print culture also established texts (and language itself) as human creations, not the pronouncements of God and saints. By making semiological perception and reflection the terms of knowledge and experience, print culture turns the human body into a container for agential possibility. Thus the anthropocentrism of empirical realism may be understood as the practice of translating reality into necessarily anthropic sign systems to be read by man (males). The concrete, practical activities needed for knowing produced image schemas that actually construct a concept of the agent, which then underpins both knowledge and agency itself. Or as Bhaskar puts it, 'if it is the requirements of an incorrigible ground for knowledge in the world of empirical realism that generates the implicit ontology of empirical realism, it is the model of man necessary to sustain the incorrigibility of this ground that forms the lynchpin of the tradition'.[66]

In contrast, critical realism conceptualizes people as richly stratified beings—partial totalities possessing powers of cognition and intentionality that emerge from human embodiment. This model of the agent is the lynchpin for critical realism's own epistemology of referential detachment and fallibility. But cognitive science introduces to critical realism the possibility of epistemological anthropomorphism without anthropocentrism. I am suggesting that while anthropocentrism necessarily entails anthropomorphism, the converse is not true. For if, as cognitive science has shown, the fact that people can only perceive the world through concepts that emerge from their embodied, sensorimotor interactions with the world— that a condition of possibility for knowledge is the body's powers and susceptibilities—then our knowledge is inherently shaped by our human corporeality. But by the same token, if perception is conditioned by embodiment, then other bodies may experience other perceptions, and thereby potentially develop other knowledge, at least within certain fields. Still, embodiment of any sort provides a basis for common and intersubjective understanding (even though it can also lead to major misunderstandings).

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[65] I discuss the problems of defining the third domain as the subjective and offer an alternative in Nellhaus, 'Signs', pp. 8–12.

[66] Bhaskar, *RTS*, p. 243.

Our knowledge is anthropomorphic, but knowledge as such need not be: the realm of knowledge (or more generally, the domain of semiosis) is neither exhausted by humanity nor oriented toward humanity, and hence is not anthropocentric. Even though the things that people make necessarily incorporate some degree of sign-making, semiosis belongs to the knower, not to the thing known.

Embodiment is integral to agency and to knowledge itself. It is the most vital manner in which practice has primacy in the development of knowledge. Yet the role of embodiment does not vitiate the knowledge produced, or reintroduce the notion that truth is culturally relative but at the species level. Knowledge, no matter how acquired, is still knowledge *of* something, and the latter is intransitive. The proverbial Martians might have different bodily powers than we do and consequently different perceptions of the world, but they would conclude that the water is *in* the jug (if it is)—and by one method or another, they would also find that water is H_2O. The limits on perception are not the limits on knowledge: the mind may rely on perceptions to generate knowledge, but as evidence of things that in some cases aren't themselves directly perceptible: inference and pattern-seeking step in, and image schemas provide those inferred patterns. What human embodiment and the consequent anthropomorphism of knowledge do underscore, however, is the fallibility of our insights into the world, and the boundaries of humanity's place among the myriad species of the planet.

Conclusion

Metaphorically, the search for knowledge is an effort to fill the gap of ignorance; it is also a purposive journey from an origin (the unknown) to a goal (the known), and perhaps back to the origin as an answer fulfills the question. Together these metaphors form the imperative for 'closure' (or the circle of 'enclosure' in the form of a recap) in the composition of an article, which—even though there is still much to understand—I will attempt to achieve. Human biology provides the condition on which the human mind exists, but it also also actively affects cognitive processes themselves; and it does so not only through the brain, but through the human body as an open totality which can continue its existence and growth only by undertaking corporeal and social interactions with the world outside itself. The encounters between body-mind and world—especially error—impose awareness of the distinction between self and not-self (the transitive and intransitive dimensions). Further, the ways in which we first experience that distinction (space, materiality, movement, time, and so forth, as well

as child/parent, self/peer, and other social figures) form image schemas and metaphors through which we understand abstract aspects of the material, personal and social world. Thus our cultural productions and processes, including theorization, necessarily involve models of various kinds. However, our interactions with material, personal and social realities are geographically regionalised, historically distinctive, and socially structured. Consequently societies develop cultures in the form of partial totalities, which may themselves interact in various ways. But the continuation of each culture (including its knowledge) depends on the society's development and use of the means of communication, that is, its communication framework. The latter, as a set of embodied practices, provides or generates models of knowledge and its acquisition, and models of how the world must exist in order to be known in those ways: epistemologies and ontologies. These models redound to the formation of the self as it strives to make its way in the world, but shaping not so much people's sense of self as their concept of self and agency. Ultimately agents' embodiment as material and social beings entails structured limits upon what we can will and how we can go about thinking, and so rules out the possibility of voluntarism. At the same time, agents' intentionality is actualized through the embodied practices upon which society depends (including communication), which implies that society cannot be simply beyond our control, and instead underscores the possibility of change.