Book Reviews

Brendan Wallace, Alastair Ross, John Davies & Tony Anderson (ed.)
The Mind, The Body And The World: Psychology After Cognitivism?
Exeter:Imprint Academic, 2007, 250 pp., £17.95/$34.90
ISBN: 9781845400736 (pbk)

Reviewed by Bill Faw, Brewton-Parker College.

This is a good and helpful book, but with some overstatements and ingratitude to past paradigm shifters! Brendan Wallace writes the Introduction and, with Alastair Ross, the final 'Conclusion: The Future of an Illusion'. In between, they step aside and let 15 other people communicate. (In what follows, chapter authors are given in bold type.)

Their 'illusion' is 'cognitivism' which (blending several definitions in the book) is the computer inspired view that humans 'map' external objects by internal representations and then manipulate those representational states using 'rules' of context-independent reason, thereby processing plans for action. Cognitivism is the Cartesian inner theatre 'cum materialism', a methodological reductionism extending from society down to individuals, on to brain electro-chemistry and beyond.

History Behind 'Cognitivism'

The Introduction and some chapters trace the history of modern 'cognitivism'. **Mark Johnson** credits Thales with having originated the notion of 'Being', which spawned millennia of (it seems) wasted philosophical speculation. Pythagoras portrayed matter and soul as distinct substances, and numbers as metaphysical entities, thereby 'disembodying mind' and grounding logic in abstract universals. **Wallace** has an interesting take on 'Plato's Socrates' as forcing politicians, priests, businessmen, and other wastrel sophists to reveal the 'rules' behind their thoughts and behaviours, and then ridiculing their 'case-based' use of examples and context — which sparked the search for the 'rules' of context-independent reason (says **Johnson**).

Plato, putting Pythagorian reincarnation to good use, believed we had learned 'rules' in an earlier life, but had then suffered a benign post-life-amnesia syndrome, whereby no-longer-explicit rules still functioned implicitly, leaving thinking as a purely disembodied, spiritual phenomenon. Much later, the neo-neo-Platonism of Galileo, Descartes and Newton (says **Wallace**) 'discovered' 'laws of nature' with metaphysical status which govern the physical world and can be understood through mathematics. A side effect of this was to generate the subject–object division, representationalism, and the resulting homunculus problem.

Continuing our authors' take on history: when psychology aspired to become a *science* in the late 19th century, it felt compelled to look for such 'laws of nature' in the 'mind' and 'behaviour'. The standard 'Mentalism–Behaviourism–Mentalism' cycle in the history of scientific psychology is *mythical*, because Behaviourism was never as pervasive as portrayed, interest in 'cognition' never completely vanished (**Erik Hollnagel**), cognitive psychology did not 'rescue us from Behaviourism', and, according to our authors, the Cognitive Revolution was not really a paradigm shift from Behaviourism.

The book's treatment of the next historical steps is quite helpful. The Cognitive Revolution added to methodological/cognitive behaviourism three disparate parallel developments of the mid-20th century. (1) Claude Shannon's 'discovery', codification, and quantification of the 'laws of information' — that can be transmitted over entirely-prosaic-even-boring Bell phone lines — got picked up to explain that perception and cognition are ways the brain 'processes information'. (2) Alan Turing's Artificial Intelligence 'test', to see if computers can give responses functionally indistinguishable from a human brain, led to the horse/cart shift of identifying the *latter* with the *former*. Since the digital computer is symbolic and abstract, and has amodal representations, syntactic rules, and language-like properties of thought, so must the brain (**Pamela Lyon**)! (3) Noam Chomsky's psycholinguistic language-acquisition-device built on Plato's 'innate knowledge', Socrates' search for 'rules' of reasoning (early Chomsky), and empirical arguments that acquisition of vocabulary and deep syntax and grammatical over-extensions seem too complex and speedy to be explained by conditioning or general cognitive abilities.

Problems With 'Cognitivism'

There are three classic 'problems' that cognitivism (presumably) identifies but cannot solve. (1) *Frame problem*: how the senses and mind select from an infinite amount of 'informational input'. (2)

Symbol grounding problem: how mental representational states can *stand for* and *map* things in the environment, or can even be known to *relate to* the external world. (3) *Binding problem:* how to create unified conscious experience and intentional action out of divided cognitive faculties such as perception, attention, memory, and the like.

Various authors also address broader problems with 'cognitivism'. 'Classification' is seen as the exclusive way to map the environment; 'representations' are 'disembodied' and non-contextual; and it maintains subject–object and individual–environment dualisms.

Defining a Second Wave of Cognitive Science

After placing cognitivism in historical context and critiquing its assumptions, the stated main purpose of the book is to explore what should take its place. The assembled authors define the emerging 'second wave' variously in overlapping metaphors, as (1) *situated cognition* or *cognition in the wild*, which retains computation, but cognition emerges in interaction (**Hollnagel**) with the embedding of cortex in brain in nervous system in organism in nature (**Johnson**). (2) *Embodied representations* (**Alexander Riegler, Johnson**), with psychology based on 'biology' rather than on 'physics'; mind and body as dimensions of organism–environment interaction, and even 'rule-based' language and logic seen as drawing heavily from spatial and corporeal metaphors (**Johnson**) — with a probable role for mirror neurons. (3) *Enacted representations* **(Johnson, Rob Ellis**, **Jonathan Bishop**, **Xabier Barandiaran**), which are also still 'representations', but with actors interacting intuitively without drawing upon existing knowledge or the past — let alone 'rules' (**Bishop**). Our intended actions help determine our perception of situations — rather than being responses to an objective state of affairs (**Barandiaran**). (4) *Non-representational radical constructivism* (**Riegler**) in which we are 'dreaming machines' interacting only with our own states; 'knowledge' is not convergence between external events and internal representations; and the environment contains no 'information' which our minds 'represent'. (5) *Biogenic* not anthropogenic approach (**Lyon**).

Applications of the Second Wave

A final purpose of this book is to suggest applications for this 'new wave'. We will look at several of these. Looking first at second wave solutions to the classical problems: (1) F*rame problem*: In **Riegler**'s 'radical constructivism', the nervous system 'produces' information rather than 'processing' it, so has no need to 'frame' and filter out infinite bits of input information, and the problem evaporates. Others of

our authors maintain that the senses only seek and process the small fraction of input that relates to the organism's needs and actions. (2) S*ymbol grounding problem*: Pre-conscious steps in visual perception 'represent' the environment not in the sense of 'pictures-in-the-head', but in having intentional content because of the *actions* they make available. **Ellis** has performed fascinating empirical research indicating a role for action in the *ventral* visual system — as well as in the dorsal! When subjects are to respond with motion congruent with the 'affordance' of the seen or even remembered object, they show facilitated responses; whereas incongruent mappings inhibit responses. This coupling of visual affordances and motor control form an enacted visual representation in the brain. (3) *Binding problem*: We integrate information in conscious experience due to the embodiment of perception and the fact that perception and action are connected directly (**Susan Stuart**). My own summary: environment-embedded and action-linked perceptual systems look for affordances, reducing the amount of input that needs to be processed ('frame'); and ground symbols in the actions they afford ('symbol grounding'); while their action-links tie various brain processing streams together ('binding').

Language Acquisition and Evolution

Several chapters challenge Chomsky! **Steve Croker** and **Gary Jones** each critique the need for a language acquisition device by using MOSAIC and related sub-symbolic (neural net) computer learning programs. **Croker** suggests that MOSAIC represents knowledge as discrimination networks, not lists of statements or procedures. With no linguistic knowledge built into the model, the computer is fed 'child-directed speech' and models reasoning, vocabulary acquisition, and language 'errors'. **Jones** reviewed MOSAIC studies showing improvement with age and performance, and decline with complexity and length, suggesting that children improve primarily due to experience, rather than in the development of capacity.

Paul Vogt gives an exciting treatment of ways of simulating the cultural evolution of a language involving variation, competition, and selection, with a Language Game model, wherein 'adults' teach and 'children' learn — and then the children become adults who teach, all leading to the type of changes found in natural languages over time. **Michael Wheeler** raises fine distinctions against his previous-co-author Andy Clark's phrase that language is the 'ultimate artifact'. To explain linguistic inner rehearsal, there needs to be some linguistic character to the brain's cognitive functioning, so that language is not entirely an *external* resource fitted to the human brain.

In conclusion: as said at the ouset, this is a good and helpful book, but with some overstatement and ingratitude to past paradigm shifters. I felt this most strongly in the historical accounts: first in championing the 'sophists' over Socrates, and then in the treatment of Galileo, Descartes, and Newton. To overstate in response: while I have always 'known' that Cartesian substance-dualism led us all astray, I was surprised to learn that the astronomy of Galileo and laws and formulas of gravity and force of Newton had done so much harm! Perhaps it took a *naïve* view of 'laws of nature' to force these scoundrels and their successors to come up with such eloquent formulas as F=ma, H_2O, and $E=mc^2$. Then nominalists from Ernst Mach to this book's authors could have the luxury to question whether there *really are* atoms or universal laws. Just wait until the 'third wave' characterizes the 'second'!

Mark Johnson
The Meaning of the Body: Aesthetics of Human Understanding
University of Chicago Press, 2007, xvii +308 pp., £20.00.
ISBN 0226-40192-8 (hbk)

Reviewed by John Dance

Johnson's new book gives a clear, accessible account of current thinking about the concept of 'Embodiment' with particular reference to its implications for the 'meaning of Meaning'. Embodiment is not so much a particular theory as an approach to formulating naturalistic explanations of mind, consciousness, thought and language. In Johnson's words it enables us to 'explain conceptual thinking without introducing immaterial mind or transcendental ego' (p 112). The idea, in embryo, has been around for some time. Most notably it was explored by Merleau-Ponty, and before him, Husserl. Recently Maxine Sheets-Johnstone developed the concept at length in her ground-breaking work, *The Primacy of Movement* (1999). Johnson has been influenced by Sheets-Johnstone and refers both to her work (indeed he starts chapter 1 with a discussion of it) and that of other phenomenologists (e.g. in chapter 12). But he finds his primary inspiration in the American Pragmatists — who of course had their own links with Husserl. There has been a considerable revival of interest recently in William James, with writers such as Pred (2005) and Edelman (2004) acknowledging his influence. Johnson, while recognising his importance,finds the work of Dewey more especially relevant to his own view of Embodiment.

The basic idea behind Embodiment is that human beings are, indisputably, bodies and that *bodies count for something*. This apparently innocuous suggestion signals, in fact, a radical assault on the orthodoxy of analytic philosophy. Sheets-Johnstone's view, to make the issue more explicit, is that the important thing about bodies is movement and that this fact must be incorporated *into our epistemological and metaphysical investigations of the animate world from the very beginning, and our scientific and historical investigations … as well*.

Mark Johnson puts it slightly differently: 'meaning grows from our visceral connections to life and the bodily conditions of life. We are born into the world as creatures of the flesh, and it is through our bodily perception, movements, emotions, and feeling that meaning becomes possible and takes the forms it does. From the day we are brought … into the world, what and how anything is meaningful to us is shaped by our specific form of incarnation' (p. ix). The traditional orthodoxy against which Sheets-Johnstone and Mark Johnson are reacting is, of course, that meaning is necessarily dependent on language. Johnson spells out some of the implications of the Embodiment view. Firstly, it requires us to reject 'disembodied' theories — amongst which Johnson numbers Cartesian Dualism (with its offshoots and variations), representational theories of mind (such as Fodor's [1975]), and the Fregean view that propositions are the basic units of meaning and thought. Much of this ground has of course been well contested of late — mostly, I think, to the disadvantage of the established view. Secondly, Johnson would have us accept that even the most abstract constructs of human thought, and indeed thought and consciousness themselves, together with the ascription of meanings, derive from, and are ultimately grounded in, the primal movement of the developing organism interacting with its environment. Following Dewey's continuity principle Johnson argues that 'body' and 'mind' are simply convenient abstractions — shorthand ways of identifying aspects of ongoing organism–environment interaction — and so cognition, thought and symbolic interaction (such as language use) 'must be understood as arising from organic processes' (p. 117).

If this initially strikes some readers as improbable, they should consider that unless a 'ghost' is somehow incorporated into 'the machine' (properly a theological, rather than a scientific, claim), Johnson's conclusion is logically inescapable. Dewey expressed this with a simple yet forceful analogy: *Just as when men start to talk they must use sounds and gestures antecedent to speech ... so when men begin to observe and think they must use the nervous system and other organic structures which existed independently and antecedently ... use*

reshapes the prior materials so as to adapt them more efficiently and freely ...[1] Here in essence is an evolutionary theory of mind. The difficulty lies in demonstrating appropriate mechanisms for transforming primitive organic interactions into thoughts and meanings. Johnson's two main candidates are Image Schemas and Conceptual Metaphors. Briefly, Image Schemas are dynamic, recurring patterns of organism/environment interactions which are instantiated in topological neural maps; structures of sensory-motor experience which can be recruited for abstract conceptualisation and reasoning. Simple examples might be the way in which concepts of 'up and down', 'front and back', 'left and right' all derive directly from the way our bodily forms are embedded in a gravitational field. It is easy enough to see how Image Schemas can generate conceptual metaphors (which are fundamental to language use), and thence, higher level abstractions such as mathematics and logic. Johnson admits that whether our brains actually work like this is at present speculative. Nevertheless he provides encouraging evidence from cutting-edge neurology and cognitive science that they indeed do.

Discussion of these issues takes up the greater part of the book and it is not until we reach Part iii (chaps 10–12) that Johnson addresses the question of aesthetics and understanding, and relates it to the previous analysis. Although he defines the term *aesthetics* in its original sense, most readers (on the basis of the book's title) will probably anticipate a discussion of art. And indeed this is exactly what we get. Unfortunately Johnson's commentary on his examples is not particularly informative. It may be interesting to learn that De Chirico achieves his menacing effects by an idiosyncratic use of perspective but this does not seem to tell us much about the meaning of the paintings. Johnson's approach however is hardly unique in the world of art criticism and, in a way, probably unintentionally, proves his own point that a compelling instance of embodied meaning is needed to refute the presumption that meaning equates with the truth conditions of sentences. Art clearly provides such an instance. Johnson's here endorses Gadamer's (2004) observation that in the experience of art there is a fullness and completeness of meaning which stands for the meaningful whole of life, and works of art should be understood as perfecting the symbolic representation of life towards which every experience tends. This gets to the heart of the matter, for, as Johnson points out, the logic of the orthodox position dismisses a whole lot of human meaning-making as literally meaningless. Such an exclusive view

[1] Quoted by Johnson, p. 140.

now seems unsustainable. Most readers will surely agree that, in practice, people find art, in all its varieties, immensely meaningful — often in surprising ways (e.g. as a mechanism of urban regeneration). Great art may leave us literally speechless without in any way detracting from its meaningfulness or obviating our understanding of it.

References

Edelman, Gerald M. (2004), *Wider than the Sky: A Revolutionary View of Consciousness* (Yale University Press).
Fodor, Jerry A.. (1975), *The Language of Thought* (New York: Th. Crowell).
Gadamer, Hans-Georg (2004), *Truth and Method* (New York: Continuum).
Pred, Ralph (2005), *Onflow: Dynamics of Consciousness and Experience* (Cambridge, MA: MIT Press).
Sheets-Johnstone, M. (1999), *The Primacy of Movement* (Amsterdam: John Benjamins).

Paul Bains
The Primacy of Semiosis: An Ontology of Relations
Toronto: University of Toronto Press, 2006, 186 pp.
ISBN: 0-8020-9003-6 (hbk)

Reviewed by Stephen Sparks, University of St. Thomas, Houston

Philosopher and semiotician alike will benefit from Bains' study of the existence, nature, and semiotic import of relations. Drawing on the work of a diverse array of thinkers, notably Gilles Deleuze, John Poinsot (John of St. Thomas) and John Deely, Bains presents his readers with a way of moving beyond the opposition between traditional Aristotelian realism and Kantian idealism, which involves examining a very special kind of relation (the sign) and its action (semiosis).

Bains' introduction begins with a quotation from Deleuze and Parnet's *Dialogues* (1987): 'Relations are in the middle and exist as such.' This is a fitting starting point, and a recurrent theme throughout this work. A fuller quotation from *Dialogues*, with which Bains begins chapter 1, highlights the necessity of dealing with relations: 'The exteriority of relations is not a principle, it is a vital protest against principles. Indeed if one sees in it something which runs through life, but which is repugnant to thought, then thought must be forced to think it, one must make relations the hallucination point of thought.' That is, although relations are imperceptible to our senses and cannot be *seen* to exist, they must be *understood* to exist. Moreover, what makes relations difficult to *think* is precisely what makes them what they *are*. Their inherent exteriority to their terms sets them at a distance.

In chapter 1 Bains explains the difference between transcendental relations and ontological relations (following Deely's translation of Poinsot's *relatio secundum dici* and *relatio secundum esse*, respectively). Merely *transcendental* relations are not truly relations at all, but refer to the necessity in explanatory discourse of referring (at least implicitly) any subject of discourse to a subject other than itself. Ontological relations, conversely, really are relations, 'external' to their terms and so reducible to neither what founds the relation nor to the terminus or endpoint of the relation. This distinction purports to offer us a new interpretive lens through which to view the history of philosophy.

Next, in chapter 2, Bains brings Deleuze to the forefront as an inventive interpreter of Hume. Deleuze makes surprising use of Hume in order to 'escape the rationalist history of philosophy and its denial of external relations'. He reasons from Hume's identification of ideas with sense impressions to conclude that 'the relations between ideas are external to ideas and may vary without the ideas varying …' But this, says Bains (albeit in passing), only gives us the externality of relations to their terms, and *not* the ontological univocity we will find in the subsequent chapter on Poinsot; for Hume's relations arise only from mind-dependent comparisons. Curiously, this seems to be the only place where Bains makes an 'external'/'ontological' distinction with respect to relations, for throughout the rest of the work the terms are treated synonymously (see pp. 31, 32, 37, 67). Indeed, the very title of this chapter, 'Deleuze and External (or Ontological) Relations,' does not imply a clear difference.

But there is a difference, and it perhaps deserves more attention than Bains gives. That relations are external to their terms means that they can change even when their terms remain constant (Deleuze himself uses the example of removing glass from a table to make this point); relations thus embody a mobility of position, are in a constant state of flux. But this does *not* entail, as the notion of ontological relations in Poinsot *does*, that relations can change not only from one mind-dependent state to another (as for Deleuze's Hume), but from mind-dependent to mind-independent (or vice versa). This indifference to mind-dependent being (*ens rationis*) and mind-independent being (*ens reale*) is a feature of ontological relations, and Bains appears to have jumped the gun in attributing the (theoretically justified) attainment of ontological (as opposed to term-exterior but exclusively mind-dependent) relations to Deleuze. The burning question is whether our awareness ever directly terminates in physical reality (*ens reale*), or instead directly knows only its own representations of

that reality; this is the 'problem of cognition' or 'problem of the external world'.

Bains finds the answer to this question in the largely unnoticed 17th-century Iberian philosopher John Poinsot and contemporary philosopher-semiotician John Deely (translator of the 1985 and 2008 bilingual editions of Poinsot's 1632 *Tractatus de Signis*), and presents these findings in chapter 3. Arguably, the most crucial sections in this chapter are those pertaining to the medieval doctrine of *species*. Bains, heeding Deely's claim that this doctrine is 'one of the least understood and yet philosophically richest aspects of Latin philosophy,' carefully elucidates the doctrine of *species* understood as *specifying forms*. *Species* are the means by which a living organism is determined or *specified* to be cognitively aware of *this* and not *that* or *nothing at all*. Further, sensation (in analytical contrast with perception and intellection) consists in *impressed* specifications, i.e., in the action of some sensible stimulus on the external senses, whereas only *expressed* specifications — what we may call percepts and concepts — involve the addition of cognitively constructed relations to the information received in the acts of sensation (which are *logically* prior). This semiotics of sensation is the indispensable key to the problem of cognition, for access to the physical world occurs only if there are 'impressions' no less than 'expressions', i.e., if we have direct access through mind-independent relations to things existing independently of our cognition. Only then can we asseverate with Bains that 'Relations do not respect any ontological Iron Curtain.'

Chapter 4 expands the previous analyses and explores further relations to von Uexküll's *Umwelt* theory (with some reference to Heidegger as well), while chapter 5 (the largest in the book) constitutes an impressively accessible consideration of Humberto Maturana and Francisco Varela's autopoiesis theory as set forth in their *Autopoiesis and Cognition* (1980) and *The Tree of Knowledge* (1987). According to these two authors, there is need in theoretical biology to define 'living systems *not* as the represented objects of observation and description, but rather as self-contained entities whose only reference is to themselves'. A living system is an 'autopoietic machine', self-productive and consisting in dynamic structural relations, in contrast to 'allopoietic machines', which produce something other than themselves. An autopoietic system is defined in terms of its self-maintenance or autonomy, and has an observer-independent individuality or identity based on its self-organization. Bains notes here a tension in this theory, a vacillation between realism (the unity of the autopoietic system is a real) and idealism (thought is unable to discover real

relations to what is other than itself), and attributes it to a failure to understand signs as ontological relations. If autopoietic theory remains unaware of the primacy of semiosis, it will continue to 'slip into an idealism based on the primacy of consciousness in the constitution or bringing-forth of the world'. Although Bains does not say it, it seems that Maturana and Varela are in the same boat as the Deleuzian Hume. That is, they have appreciated the externality of relations, but not the ontological univocity of relations.

The conclusion of Bains' study notes a few of the 'many interesting directions' we can take the findings of this work, musing on how we might engage in a responsible 'autosemiopoiesis'. I submit that an emphasis on the primacy of semiosis as open to the real *and* the ideal, physical *and* socially constructed reality, constitutes an important element of responsible autosemiopoiesis; anything less would result in autosemiomyopia.

Two imperfections of this book bear noting. First, it almost consistently confuses ideas or concepts (formal signs), which are actually *foundations* of sign relations, with the *pure relations themselves* (see pp. 10, 33, 42, 50–51, 119; but cf. 54–55). Second, it overlooks Deleuze's semiotically rich *Proust et les Signes* (1964; translated into English 1972). Notwithstanding, Bains has written a very rewarding book, one that brings its reader to the very cutting edge of what is *actually* postmodern in philosophy today.

BOOKS RECEIVED

Mention here neither implies nor precludes subsequent review

Adams, Frederick & Aizawa, Kenneth, *The Bounds of Cognition* (Blackwell 2008)

Ahlström, Kristoffer, *Constructive Analysis: A Study in Epistemological Methodology* (Göteborg University 2008)

Bainbridge, David, *Beyond the Zonules of Zinn: A Fantastic Journey through your Brain* (Harvard University Press 2008)

Blackstone, Judith, *The Empathic Ground: Intersubjectivity and Nonduality in the Psychotherapeutic Process* (SUNY Press 2007)

Graves, Mark, *Mind, Brain and the Elusive Soul: Human Systems of Cognitive Science and Religion* (Ashgate 2008)

Haddock, Adrian and MacPherson, Fiona (eds.), *Disjunctivism: Perception, Action, Knowledge* (OUP 2008)

Koene, Net, *The Shape of Information: How Language Gets Hold of the World* (StichtingNeerlandstiek, Amsterdam/Nodus, Münster 2007)

Watson, Gay, *Beyond Happiness: Deepening the Dialogue between Buddhism, Psychotherapy and the Mind Sciences* (Karnac Books 2008)

Zeman, Adam, *A Portrait of the Brain* (Yale University Press 2008)