

## *Book Reviews*

**Lynn C. Robertson and Noam Sagiv (ed.)**

*Synesthesia: Perspectives from Cognitive Neuroscience*

New York: Oxford University Press, 2005, 266 pp.

ISBN 0-19-516623-X

*Reviewed by Richard E. Cytowic*

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Twenty-five years ago, my colleagues warned me not to pursue synaesthesia because it was ‘too weird, too New Age’. ‘It will ruin your career,’ they prophesied, wide of the mark and not even wrong to judge by the renaissance of interest in a phenomenon often regarded as wholly subjective. Among the flurry of publications occurring since reflexive hostility has waned is this edited collection by **Lynn Robertson** and **Noam Sagiv**. Their book stems from a Cognitive Neuroscience Society symposium, with added chapters by two synaesthetes and others who have studied the phenomenon’s cognitive/neural basis or its development. The book ably reflects synaesthesia’s phenotypic diversity.

Synaesthesia bears on normal cognition: perception, attention, consciousness, memory, learning, language, thought and development. Evidence from infant behaviour, cortical plasticity, cross-modal matching, metaphor and language, as well as synaesthesia, suggests that connections — either direct or indirect — among brain regions typically associated with discrete modalities underlie each of these phenomena. Therefore elucidation of one topic can inform us about the others. While we learn much about normal cognition by studying deficits, there is much to learn from positive phenomena such as synaesthesia. A central focus of present synaesthesia research is on developing methods to confirm its perceptual reality. Most commonly, one finds a blend of behavioural data substantiating synaesthesia’s automatic perceptual nature, and functional imaging studies showing activation of, for example, colour areas during reported synaesthetic colour experience.

**Sean Day** reviews synaesthesia’s demographics and socio-cultural aspects, also addressing widespread misinformation, mysticism, and pseudoscience about it being a sixth sense or somehow paranormal. He especially addresses the

lifelong frustration subjects feel at not being believed. It is especially galling that doctors, psychology professors, and similarly exalted professionals react with disbelieving disdain when their comfortable view of how perception ‘should be’ is challenged by first-hand experience of how it actually is.

**Blake et al.** describe a series of experiments demonstrating synaesthesia’s automatic perceptual nature and also explore the degree to which attention and awareness affect the resulting experience. They describe speeded reaction time tasks, the use of ambiguous figures, and Stroop-like tasks using stimuli either congruent or incongruent with a given subject’s synaesthesia. For example, a visual search that relies on the pop out of synaesthetically coloured oddball stimuli affects reaction time. Through such means they show that synaesthetic colour can be available before conscious awareness of the identity of the inducing stimulus.

**Smilek and Dixon** discuss grapheme–colour synaesthetes who ‘project’ or experience colour as an overlap appearing atop — meaning visually bound to — printed graphemes. They present evidence that synaesthetic colours are bound to graphemes before subjects attend to and become aware of them. The meaning of graphemes plays a role in binding given that the colour of an ambiguous figure depends on how subjects interpret it. Furthermore, experimental evidence is consistent with subjective reports: synaesthetes claim to perceive coloured graphemes rather than black graphemes that subsequently become coloured. The implication is that graphemes are processed as meaningful whole objects.

**Savig and Robertson** ask what synaesthesia shares in common with normal perception. The answer is a lot. They review evidence showing synaesthetic correspondences to be prevalent in human cognition, then ask whether synaesthetic binding obeys rules of normal binding of surface properties and whether attention plays a central role as it appears to do in normal perception. They discuss synaesthesia as a positive phenomenon, a kind of hyper-binding, and suggest several possibilities for its neural substrate.

The late **Jeffrey Gray** recaps how synaesthesia is a window on the hard problem of consciousness, summarizing his many years of thought on the issue.

**Ramachandran and Hubbard** aspire to inspire new interest in synaesthesia so that it gets the attention it deserves. They take on the philosophical riddle of qualia, suggesting how the study of synaesthesia can provide hints about the evolution, functional significance, and neural correlates of these entities. They make much of the fact that the grapheme and colour V4 area lie adjacent to one another on the fusiform gyrus. Their studies with fusiform and angular gyrus synaesthetes indicate that synaesthetes are behaviourally heterogeneous. It is thus premature to perform group studies, and existing ones need cautious interpretation. They further lend support for a left-hemispheric lateralization of synaesthesia, which I first proposed in 1989, and end by speculating why synaesthesia is more common among artistic individuals.

The two best chapters are those by **Daphne Maurer and Mondlach**, reevaluating the former’s hypothesis of neonatal synaesthesia, and **Lawrence Marks**, weighing the constraints imposed by development on competing theories of

synaesthesia. The latter is a tour de force. Specifically **Marks and Odgaard** lay out how neural theories thus far proposed fail to account for the learning that must underlie the development of any kind of synaesthesia involving culturally specific artifacts such as integers and letters (such lexical synaesthesia accounts for two-thirds of all instances). Each of the existing theories suffers from limits in its ability to explain all varieties of synaesthesia observed.

Such limitations point to a possibility I raised two decades ago, namely that synaesthesia may not be a singular entity. Nonetheless, synaesthesia has moved from an era of vague phenomenology to one of experimental research and shows itself to be far more than a strange curiosity.

The book's one shortcoming is having no chapter on genetics. Synaesthesia is an ideal condition to explore perceptual genomics, the study of how genes affect the way we perceive the world. Since it clusters in families, is not terribly uncommon, and can with care be confidently phenotyped, it provides a condition that can be traced through pedigrees for family linkage analysis.

**Ran R. Hassin, James S. Uleman and John A. Bargh (ed.)**

*The New Unconscious*

Oxford University Press, 2005, 604 pp., ISBN 0-19-514995-5 (hbk)

*Reviewed by Justus de Swart*

Does consciousness provide an exception to the rule that humans are basically automatons? By bringing together recent research in the fields of social cognition and social neuroscience, this book seems to suggest that there may be no exceptions. As will be described later, though, human 'automatons' may not necessarily be 'mechanistic'. One of the editors (Uleman) asks: 'What, if anything, cannot be done without awareness? What is consciousness for?' (p.6). Instead of tackling these questions head-on, a kind of 'subtraction' approach is adopted. The procedure is to exclude, one-by-one, mental phenomena having an unconscious basis, to see if any conscious residue remains. Interestingly, though it complicates matters, current research into the new unconscious shows that conscious and unconscious processes share some characteristics.

The book is divided into sections, starting off with 'Fundamental Questions', which takes a refreshing look at the familiar sticky problems over homunculi and free will. Next comes 'Basic Mechanisms', to do with what is known about the unconscious, most of it being empirically based. The last three sections explore the importance of the new unconscious to aspects of (social) mentality commonly thought to belong exclusively to consciousness. These are titled 'Intention', 'Perceiving and Engaging Others' and 'Self-Regulation'.

There is an impressive amount of experimental data supporting the view that a great part of human mentality - from perception, similarity detection and counterfactual thinking to unconscious metacognition (planning), goal-pursuit and working-memory - is reined in by the 'four horsemen of automaticity' (p.

282), i.e. efficiency, lack of awareness, lack of control and lack of intention. Nonetheless, while considering the meaning of concepts may be helpful in understanding the relative importance of automatic vs. controlled processes, one learns that most experimental tasks that tap automatic processes are not really process-pure. They seem to employ a *combination* of both conscious and unconscious modes of mental functioning. Indeed the controlled processes related to conscious awareness may show a trichotomy: '(1) controlled processes that can occur both consciously and nonconsciously; (2) controlled processes that can be completed outside of conscious awareness but may be speeded, facilitated, or otherwise affected by conscious awareness; and (3) controlled processes that cannot occur non-consciously.' (p. 217). Thus far there is experimental proof for process (1) only. Ran Hassin asks whether category (3) processes exist. Confirmation of their existence might cut short all further speculation about the epiphenomenal nature of consciousness, but so far this is lacking.

To recap, whether conscious or unconscious, both behavioral control and intention can be affected by automatic or by controlled processes. Moreover, control functions defined as 'non-perceptual manipulation of attention or information that allows the organism to overcome the habitual and to go beyond the immediately available.' (p. 215) means 'there is no a priori reason to expect that controlled processes would be exclusively conscious' (*ibidem*). So it seems that the term 'automaticity' suggests a faulty analogy: automaticity in humans does not necessarily entail mechanistic mental processing.

Careful reading of *The New Unconscious* provides a salutary correction to psychoanalytic ideas about the unconscious. The 'horsemen of automaticity', springing from our habits and temperaments, appear to operate more like context-sensitive and 'custom-made' drivers than Freudian, conflict-ridden demons. In short, the new unconscious is less bleak and fixed than in the psychoanalytic picture, and more akin to the world of unconscious inferences proposed by Herman von Helmholtz.

For example, the huge amount of information reaching the brain does not seem to go to waste in an irrational chaos, even though only a tiny proportion makes it into consciousness. On the contrary, the unconscious appear to have the trappings of volition, intentionality and even rationality. 'Unlike the psychoanalytic unconscious, it has no innate drives that seek gratification without regard to constraints of reality and society.' (p.5). Moreover, unconscious modes of functioning can be moderated, rather than censored out of the behavioral repertoire, as the influence of cognitive awareness on the amygdala/emotion system shows (pp. 66-67). The latter opens the possibility that 'the purpose of consciousness – why it evolved – may be for the assemblage of complex non-conscious skills. In harmony with the general plasticity of human brain development, people have the capability of building ever more complex automatic "demons" that fit their own idiosyncratic environments, needs, and purposes.' (p. 53). Seen this way we are thoughtful, self-engineering 'robots' looking to succeed through 'strategic automaticity' (p.466).

The careful reader may also note that the book is sympathetic to social-constructivist theories in which language, used in multi-dimensional webs of social interaction, is the most important driver of human mentality. The function of consciousness could then be envisaged as the inner realization, through the use of language, of particular (social) states in the world. These (social) states in which humans construct a feeling of authorship when the ‘right timing, content, and context link our thought and action’ (p. 27) reveal a special capacity for episodic representation of the (relational) self, the ‘virtual agent’ (p. 30) of the mind. Kihlstrom (1987, p. 1451), one of the pioneers in the field, says about this representation that it ‘resides in the working memory, but apparently the links in question are neither *automatic* nor *permanent*, and must be actively forged’ [italics added]. Does this mean that this special activity is neither an innate sensitivity (the genetically dictated workings of a module), nor formed by repeated experience, but some act of disengagement from both of these *automatic* processes by a virtual agent that is suddenly *online* and connected to the (inner or outer) world? One of the major purposes of consciousness could then be to ‘strategically switch from conscious and effortful action initiation (guided by goal intentions) to having goal-directed actions effortlessly elicited by the specified situational cues’ (p. 488). Our sense of timing, content and context, supported by the use of language, can give human behaviour a remarkably flexible means of switching behavioural strategies when necessary. Still, one may wonder whether this disengagement process is initiated by consciousness. As stated before, it remains to be seen whether ‘controlled processes that cannot occur nonconsciously’ really exist.

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### Christopher Partridge (ed.)

*UFO Religions*

London, Routledge. 2003, pbk. 383 + xvi pp. ISBN: 0-415-26324-7

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Contributors to this collection of seventeen essays range from theologians, through anthropologists to psychologists; most are from the field of comparative religion. Some tell us they had been ‘participant observers’ in the group they highlight. Partridge (a theologian) gives an excellent 42-page introduction on ‘understanding UFO religions and abduction spiritualities’. Ten chapters follow, describing major examples of UFO Religions and ‘ufological’ activities, then seven chapters on ‘understanding narratives’.

The first flurry of UFO activity was secular, beginning in the 1946 Scandinavian ‘ghost rocket’ sightings, the 1947 Cascade Mountains ‘flying saucers’, and that most-famous incident in Roswell, New Mexico — immortalized by the

X-Files TV series — one of the *few* conspiracy theories involving the US military and spy organizations that I do *not* take seriously! All this was popularized by two best-selling authors: George Adamski (1953: *The Flying Saucers Have Landed*) and Erich von Daniken (1968: *Chariot of the Gods*). Religious movements that incorporate UFOs and extraterrestrial beings into their belief systems began in 1947.

To non-participants, the groups discussed must seem bizarre. They include:

- The Unarius Science of Life, formed in 1954, awaiting the arrival of spaceships from the planet Myton, when Earth understands their peace mission.
- The Aetherius Society (1956) believes that Cosmic Masters, including Buddha, Jesus and Krishna, channel messages to those who achieve high levels of yogic consciousness.
- The ‘late’ Heaven’s Gate group (1975) recently committing mass suicide in relation to the Hale-Bopp Comet.
- The Urantia Foundation (1955) reveals God as the creator, through his Creator Sons, of many universes.
- The leader of the United Nuwaubian Nation of Moors (1969), Dwight York, recently arrested for child molestation in my state of Georgia, is a being from the galaxy Illywun.
- The Ministry of Universal Wisdom (1953) claims to have telepathic/channeling connections with a being called Ashtar, who has threatened to burn the Earth if we do not renounce the hydrogen bomb.
- There are also extraterrestrial elements in the Church of Scientology, Baha’i, Unification Church, International Society for Krishna Consciousness, Family of God, and in groups with relatively orthodox Christian or Muslim faith.

Several authors tell us that most of the UFO religious groups draw heavily upon *New Age* themes such as meditation, channeling, higher stages of consciousness, reincarnation, and a divine potential in human nature, derived in turn from Theosophy – much of which would be quite familiar to many JCS readers. Yet some of the UFO religions reinterpret *supernatural* beings and events as *extraterrestrial* ones; they are ‘physicalists’ and even outright atheistic, re-interpreting telepathy, ‘channeling’ and prayer into advanced uses of cosmic, but purely physical, energy, such as the Aetherian’s ‘prayer battery’ that can store 700 hours of psychic energy, to be beamed to trouble spots in the world.

Each author expresses keen interest in, but healthy skepticism toward, the reality of UFOs and the truth-claims of UFO religions. This book is thus different from the countless others (listed in its 22-page bibliography) written by and for true believers; also different from those that examine specific sightings of UFOs or claims of ‘contact’ or ‘abduction’ in order to distinguish fact from fiction, reality from illusions. But, despite the professional backgrounds of the

contributors to this book, they don't necessarily conclude that all UFO Religious claims are false or that devotees are mentally ill. Indeed, when psychologically profiled, sect members appear no more abnormal than the average reader of this journal (!) — except for a high incidence of post-traumatic stress disorder among 'abductees', which could be the 'effect' of such encounters if indeed they are real. More likely, though, it's an indication that a false memory of abduction can be just as traumatic as a memory of an actual traumatic experience.

The various writers suggest a range of explanations as to why such average people might come to harbour weird beliefs. Partridge favours a combination of 'subjective probability' and 'the foot in the door' phenomenon. Almost everyone would agree that it is possible, and perhaps probable, that there is life on other planets — Rover and Spirit are looking for it right now. Some 46% in a US poll move from there to a strong possibility that such life could evolve intelligence capable of creating space ships; then slip-slide down the rapidly-decreasing probabilities that space ships could break or get round relativity laws and get here. Following this sort of logic, 14% allow they have seen or contacted by extraterrestrials (and/or have had alien messages channeled through them), while 2% claim to have been abducted.

Many of the theories offered as to why people would join UFO religions draw from the late-twentieth-century zeitgeist. The phenomena arise in an age when we know such technology is conceivable. ETs are technological 'angels' (Jung), uniting science and religion at a time when traditional religions are waning but spiritual hunger remains, along with a yearning for revelation and immortality. Or, if you prefer, it can all be attributed to twentieth-century narcissism, with the concept of evolution expanded beyond genetics to culture and spirituality; or perhaps to fears of imminent world homogeneity and loss of diversity.

Many theories are more sociological and psychological, invoking charismatic leadership, mass hysteria, the use of intellectual introversion by in-groups, mind control, the 'true believer' mentality, 'a largely unaffiliated population of 'seekers' who drift promiscuously from one spiritual group to another' (p. 107), sensory deprivation tactics, new languages, emphases on leaps of faith, the pleasure of knowing that things are not as they seem, and even a new putative DSM-IV candidate: 'close extraterrestrial encounter syndrome' (p. 336). Even stronger theories are needed for the more bizarre phenomena — abductees might be in shaman altered states; articulated concepts of 'conscious dying' and reincarnation might be needed to persuade people into mass suicides. You pays your money, and you takes your choice of explanation!

I want to close with some reflection as to why the otherwise quite sober and scholarly Book Review Editor of this esteemed journal would want a book on this topic reviewed. Since I was afraid to ask him myself (for fear he might unburden himself about some traumatic experience he had in 1947), I will merely speculate that it has something to do with the fact that many aspects of UFO religions relate to themes dealt with in the 10 years of the *Journal of Consciousness Studies*: meditation, higher states of consciousness, altered states of consciousness, evolutionary (extraterrestrial?) origins of consciousness,

physicalism versus various shades of dualism, Quantum Physics, and, of course, ‘Martians’ and zombies! The subject of this book may reflect the Jungian ‘shadow-self’ of *JCS* concerns.<sup>1</sup>

### **Philip Clayton**

*Mind & Emergence: From Quantum to Consciousness*

Oxford University Press, 2004, 236 pp., £35, ISBN 0 19 927252 2

*Reviewed by Anthony Freeman*

Emergence — broadly defined — says that when physical entities reach a certain level of organisational complexity there emerge genuinely new properties, such that the whole is more than the sum of its parts. The allure of emergence for consciousness theorists lies in its tantalising promise to transcend the gulf between reductive physicalists, for whom everything is ultimately explicable in terms of microphysics, and dualists, for whom there exists an irreducible mental or spiritual component that is essentially non-physical. Its Achilles’ heel is a dependence on the notion of intrinsic levels (atoms, cells, organisms, etc.): critics complain that such ‘levels’ only have meaning in the context of a conscious observer, and cannot therefore be invoked to explain the presence of consciousness in the first place.

Philip Clayton is a philosopher of religion, and he approaches the topic of *Mind and Emergence* with an even greater prize in his sights than the reconciliation of physicalism and dualism. He is after a way to bridge the ultimate gulf between natural science and divinity. In the work under review he convincingly narrows the gap, but does not quite close it. His account of emergence also fails to resolve the question of ‘levels’, although I can envisage his emergent concept of deity eventually providing a way round the problem.

In his first three chapters Clayton gives the standard history of emergence doctrine in philosophy, expounding with examples the ‘weak’ and ‘strong’ versions of the theory. He argues for the superiority of emergence over reductionism in explaining the findings of the natural sciences from quantum physics up. In particular, he is impressed by the claim that emergent systems exert ‘downward causation’ to account for observed functions and behaviour at the biological level of description.

Chapter four examines mental events and properties in relation to the organisms in which they arise, with Clayton insisting that philosophy of mind must

[1] Editor’s note: Sorry to disappoint you Bill — I’ve no UFO closet to come out of. It seems to me that UFO-associated phenomena provide a particularly striking demonstration of the fact that the stories current in a society can have a dramatic impact on the content of people’s consciousnesses. That surely merits an airing in the *JCS*. I don’t myself see it as a ‘shadow-self of *JCS* concerns’. Rather as the extreme end of a spectrum whose more normal manifestations are central to your own specialty — vision. After all, what we experience seeing out there in the world is not derived from some raw flux of visual input, but is due to input activating pre-learned features of the world — ‘objects’ of visual perception if you like (see Ito, M., ‘Internal model visualized’, *Nature* **403**, 2000, pp. 153–4.). It seems that ‘objects’ of cognition, such as a concept of UFOs, can equally underpin what people come to experience.

stay firmly linked to neuroscience. Building on the foundation laid in the first half of the book, he invokes luminaries such as John Searle and Roger Sperry in support of the causal efficacy of emergent mental states. Higher-level phenomena exert downward control in such a way that ‘they *supervene*’ but ‘do not disrupt or *intervene*’ in causal relations at the lower level (Clayton quoting Sperry).

Having established this framework for understanding human mental causation, Clayton approaches in the fifth and final chapter his real goal of a theology that is consonant with natural science. He finds the emergence thesis attractive because it makes mentality and consciousness part of a whole hierarchy of emergent phenomena. As a consequence it offers a middle ground between the stark either/or choice of the totally physical or totally non-physical. Further — by raising the question, Why should the individual mind be the final stage of emergence? — it opens up a possible path from the physical to the divine.

The idea of an emergent level beyond the individual conscious mind (e.g. through the internet) has been posited by a number of recent writers, and Clayton speculates that God, or at least the attributes of deity, might be the ultimate emergent reality (cf. Freeman, 2001, for a similar proposal made independently). He traces this idea back through Wolfhart Pannenburg (1969) and Samuel Alexander (1920) to the eighteenth-century Romantic philosopher Friedrich Schelling. But there is a major theological objection. To make God dependent upon the natural order goes against both a basic religious instinct and also the tenets of traditional theism. This makes an interesting contrast with dualist approach.

Dualism, having already in its ontology two radically incommensurate natural substances — mind and matter — can accommodate the further radical division between a creative divine mind and a created natural order. In other words, dualism is well placed to safeguard God’s transcendence and allow him to exist prior to and independently of the world. But this very separateness creates problems for another of theism’s stipulations, namely that God should be in ongoing causal communication with the world. Emergence, on the other hand, by keeping God within the bounds of naturalism, solves this latter difficulty (since divine action can now be explained in essentially the same way as human action) — but at the cost of divine transcendence.

In a closely argued section ‘What naturalistic explanations leave unexplained’, Clayton pushes at the limits of naturalism, comparing Thomas Nagel’s agnostic rationalism (1986) with Alvin Plantinga’s theism (1993). He concludes that ‘the explanatory gain of transcendent mind is greater than what is lost by moving beyond the parameters of purely naturalistic explanations’. In my view his argument is not yet convincing, but Clayton’s ideas are stimulating and certainly worth pursuing further.

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**Michael Tye***Consciousness and Persons: Unity and Identity*

Cambridge, MA: MIT Press, 2003, 203 pp., £22.95, ISBN 026220147X (hbk).

*Reviewed by Roblin Meeks**Princeton University*

Hume confesses in his *Treatise* that when faced with the problem of unity he must 'plead the privilege of the skeptic' for it proves 'too hard for [his] understanding' (p. 636). Michael Tye argues in *Consciousness and Persons* that Hume's predicament is a product of his assumption that the phenomenal unity characteristic of our conscious mental lives consists of distinct experiences somehow amalgamated into a single stream of consciousness. Tye contends that the proper account of this unity instead begins with experiences as entire streams of consciousness. On Tye's 'one experience view' no multiple experiences need to be unified; each stream of consciousness is a single experience that contains individual contents describable in different ways. He then devotes the last two chapters to explaining the behaviour of split-brain patients and to accommodating our intuitions regarding personal identity in light of his alternative account.

Tye begins by arguing that the traditional, many experiences view leads to a third-man style regress. Take separate but maximally unified experiences of conscious perception (seeing that canonical red tomato, for example), bodily sensations (itches, tickles, and pains), conscious thoughts, which 'come wrapped in auditory images' (p. 79), and moods. For these all to be unified, some additional unifying relation must exist between them. This relation must also be an experience, Tye claims, for otherwise there would be nothing that it's like to have one's experiences unified. But we can then ask what unifies those experiences with the experience of the first unifying relation, and so on indefinitely.

Avoiding such a regress means reconsidering the problem itself. Under Tye's alternative, experiences are maximal PANIC states, his acronym for states possessing poised, abstract, nonconceptual, intentional content. My foot itching thus amounts to my having a representational state with the appropriate content, as does my perceptual experience of seeing a red tomato. The two are unified in virtue of entailing a PANIC state with the content that my foot itches and that I see a red tomato. Phenomenal perceptual-bodily unity, therefore, results from representational content being closed under conjunction.

He extends his one-experience approach to cover diachronic unity as well. Just as there are no distinct experiences to unify at a particular time, Tye contends that we are likewise not introspectively aware of a succession of distinct experiences. Moreover, the phenomenon to be explained is not merely that an experience B follows an experience A for some subject, but also that subject's *experiencing* A followed by B. Accordingly, Tye argues that the simpler hypothesis here is that subjects experience succession not in virtue of tokening successive experiences; instead, unity through time is best thought of as content closed under conjunction for a given period of consciousness, a single experience that

‘represents everything experienced within the period of consciousness as a whole’ (p. 97).

Tye’s account certainly compels but doesn’t quite convince. It is limited by his perhaps unsurprisingly strong commitment to representationalism and transparency — the claim that introspection does not reveal the qualities of our experiences themselves but rather we see right through them to the properties of the objects perceived — and opponents will find little here to persuade them otherwise. (For the uninitiated, though, Tye does include a useful appendix discussing the various permutations of representationalism along with his preferred kind.) Though Tye has vigorously defended transparency elsewhere, it remains controversial. Many object that one can indeed introspect the properties of one’s experiences, such as the blurriness of one’s visual field, and that at least some of these introspectible properties are nonrepresentational. These disagreements aren’t new, of course, but we could use theoretically independent reasons for radically rethinking the problem of unity itself.

It’s also not clear that the many experience view must engender a vicious regress. Certainly its proponents need to provide a sustainable account of the unity relation, but that relation arguably need not be an experience or phenomenally conscious. Rosenthal (2003), for one, argues that mental unity, such as it is, results from the way in which we are conscious of ourselves, and we are conscious of ourselves in virtue of having higher-order thoughts (HOTs) about our own states. Since HOTs need not themselves be conscious, we run into neither a regress of conscious states nor of phenomenal unifying relations. And one could understand Hume’s difficulty as partly a function of his adopting a perceptual model of introspection. Similarly, Tye’s regress depends upon the awareness that grounds the unity of one’s experiences being the same kind as those experiences — a controversial assumption at best.

Nevertheless, *Consciousness and Persons* raises serious and important challenges to widely accepted views of phenomenal unity and their implications. Those favouring representationalism will find much to like in Tye’s extension of the view to the many subjects engaged here. Those less friendly to the theory will find themselves left with as many questions as answers, but these are questions that anyone interested in the problem of unity must consider.

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**Stanley I. Greenspan and Stuart G. Shanker**

*The First Idea: How Symbols, Language, and Intelligence Evolved From Our Primate Ancestors to Modern Humans*

Cambridge, MA: DaCapo Press (Perseus Books), 2004, 504 pp.,

£12.04 (Amazon.co.uk) / \$16.50 (Amazon.com), ISBN 0-7382-0680-6 (hbk)

*Reviewed by Greg Nixon*

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At last, a worthy antidote to the noxious trend that explains all human consciousness and behaviour in terms of the evolution and activities of the brain alone! Cognitive science, evolutionary psychology, and neurophilosophy, while adding complexity, have embraced the assumption that life unfolds primarily on the basis of evolving, interacting genes. But this view is unbalanced at best. Greenspan and Shanker remind us that opposition to it need not imply mysticism, idealism, or anything *spooky*. They state the predominance of cultural learning passed on from generation to generation, its content always changing and never complete.

A second theme of the book is that it supplies strong evidence that rationality and cognition are not opposed to emotion but are in fact the fulfillment of the *emotional education* hopefully received by every healthy child. To think is to emote, but it is refined emotion that functions in a controlled manner. This is an antidote to the Cartesians, Freudians, and perhaps even Piagetians who have insisted that, developmentally, the rise of reason in maturity *overcomes* primitive or childish emotional drives.

The authors propose that such emotional learning has culturally evolved over millions of years, with reversals here and dead ends there. Each generation passes on its cultural truths primarily through interactions between infant and mother or other intimate caregivers. But each generation may also contribute in subtle ways to this body of learning or, on occasion, subtract from it. Every child is regarded as recapitulating, in a matter of years or months, the learning that culture achieved over millions of years. Language is the primary example here.

They find little evidence that things so central as language or personal memory are themselves innate, though clearly the capacity to achieve them has become genetically based. The nature-nurture debate becomes appropriately complexified. The antidote to genetic imperialism involves showing that experience shapes genetics more than genetics shapes experience.

Greenspan and Shanker identify 16 stages of individual f/e (functional/emotional) development, plus a timeline of 12 steps for the f/e evolution of human cognition, outdoing the three steps of Merlin Donald (1991). The neologism 'meme' is thankfully not used, though they see human behaviour and the quality of conscious experience as arising from culturally transmitted learning. They cite Terrence Deacon (1997) approvingly, so presumably accept that structural brain adaptations occur along with the slow *invention* of formal language structures. They don't deny the brain's influence, but see it as a dance with learning, and the lead is clearly learning.

Greenspan is an expert on infant care and autism, while Shanker, apparently a Wittgenstein scholar, specializes in studying the symbolic activities of trained apes (bonobos). Perhaps as a consequence of their particular expertise, they spend less time on the slow discovery and improvement of speech, symbolism, and thought in early humanity than they do on the rapid appearance of these capacities in individual upbringing. They appear to accept too early and gradual an origin for formal human language, not being critical enough of nonhuman communication or of early paleoanthropological finds. As a result, many ambiguous discoveries are treated as proofs of the presence of abstract ideation. It is not noted that the islands of discovery seeming to indicate a very early emergence of symbolic interaction are just that — *islands*. There is (as yet) no indication of continuity in such activities over succeeding millennia. Nor do the authors deal with early humanity's immersion in the sacred; language is accepted as having been invented to meet functional needs and for the pleasure of communicating.

Another reservation I have is that all the juice is in the first two parts of the book. Greenspan and Shanker lay out their case in the first 184 pages, leaving the rest for sometimes excruciating exegesis or jumps into global recommendations. Indeed, they emphasize so strongly 'the hand that rocks the cradle rules the world' that they have added a hopeful final chapter to guide us all toward Global Interdependency through the education of emotional response in every child's first year. Alas, we have many hurdles to overcome before every child on the planet can receive the loving interactive attention that will lead it to the authors' highest stage of development in old age: '...true wisdom free from the self-centred and practical worries of earlier stages' (p. 91) and a peaceful world in general.

Optimistic? Sure, but this tome is still recommended for its important defence of culture and learning.

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### Gregg Rosenberg

*A Place For Consciousness: Probing the Deep Structure of the Natural World*  
 Oxford University Press 2004, 344pp, £28.99, ISBN 095168143

*Reviewed by Hugh Noble*  
*University of Sussex*

First a confession: I believe that consciousness is an information processing system which operates in our brains, so am sceptical of more exotic explanations. And this one is very exotic. It comes from a prestigious stable — the Oxford University Press's 'Philosophy of Mind' Series, edited by David Chalmers. The dust

jacket displays fulsome praise from several academics. Rosenberg's PhD thesis in philosophy won him a distinguished research award, it appears, and he is a past Fetzer Fellow in AI at Georgia University.

Writing with panache, he advances his case against physicalism. It is an involved argument, which draws upon the full lexicon of philosophical discourse. Fortunately for a reader like myself, he also summarises his argument with these words:

... just a more philosophical way of pointing out that the physical facts alone fail to imply some observable facts about phenomenal consciousness (p. 54).

And there, I think, we have it — these 'observable facts' are the foundation on which this edifice is built. It is indeed a fact that people have intuitions concerning consciousness. It is *not* an established fact that such intuitions are valid. This distinction, and the possibility that intuitions have a physical explanation, are ignored.

Rosenberg has proposed a new property of matter; a risky ploy, but sometimes legitimate. Newton did it when he introduced the idea of gravity, which acts on mass. However, a departure from established scientific theory requires considerable justification. Newton gave us the differential calculus and used it to demonstrate his theory's enormous predictive power.

Rosenberg calls his special property 'receptivity'. Anything which has receptivity is able to receive experiences (i.e. it has the power to be affected). Those experiences dictate its future behaviour, through 'effectivity'. To support the idea, he envisages a new kind of causal connectedness. To 'make space' for this, he devotes a good deal space to an attack on David Hume's views, which are summarised as follows:

In Hume's view, the evolution of the universe is objectively unconstrained, and our causal stories are interpretive projections of the mind, a kind of psychological habit. In the *world* no connections of dependency, constraint, or production hold between individual events (p. 131).

This, however, is a misrepresentation of Hume's philosophy. Hume did not make sweeping assumptions about the universe or 'real' world. On that subject he was both ambivalent and reticent. Hume's approach moreover, does not prevent us from supposing all kinds of connectedness between events. All he did was to point out that whatever may be the nature of any connections, we lack the ability to perceive more than just one event following another. Everything else is supposition and theoretical construct.

Having disposed of Hume to his own satisfaction, Rosenberg presents his account of the physical world. He begins by observing that consciousness has 'boundaries'. (e.g. a person has consciousness, but the component parts of that person's brain, considered in isolation, do not have that property.) There are upper bounds too. A system of which people are the components does not have consciousness, or so it would appear (e.g. Block's Chinese Nation thought experiment). So why do these boundaries exist and what kind of thing is a

‘conscious individual’ or ‘experiencing subject’? To answer that question the author introduces things called ‘natural individuals’ (NIs):

*Natural individual, base case:* Any primitive effective or receptive property is a zero-level natural individual.

*Natural individual, inductive case:* Any set of natural individuals of level N bound into a completed receptive connection constitutes a natural individual of level N+1 (p. 178).

Yes ... but what is an NI exactly?

... pure level-zero individuals are abstracts, and are never found in a pure state in nature (p. 170).

NIs, it seems, bind together to form effective/receptive NI-complexes. Pure zero-level NIs are like cans of coke which can be sold only in six-packs (p. 170).

Of receptivity he says:

Receptivity itself acts as the causal connection. Nature needs no other ontological grounding for the causal connection (p. 172).

He deals with alternative explanations by laying down complex necessary conditions which they fail to meet (p98). However ...

... what we count as evidence for consciousness and our theory of consciousness are heavily intertwined (p. 93).

In Rosenberg’s view, consciousness is not an epiphenomenon separate from the familiar physical world. It is an alternative way of looking at that world (using NI causality). Every argument, however, is couched in terms of categories which depend upon splitting debatable hairs, often incomprehensibly as far as I was concerned. I suspect that the meaning has been lost in a hermeneutic circle.

The book has lots of complicated diagrams with arrows and boxes, and makes use of some very curious analogies. Here and there the esoteric academic style is punctuated by poetic flights of fancy.

Picture the world as a jewel set in a heaven of transparent possibilities, each flowing along its surface, peering as if at sparkles on ice seen through a window, fingers gently probing for an opening through which it can pour itself (p. 152).

There are also self-contradictions. For example contrast:

Phenomenal consciousness does not necessarily involve language or self-understanding. For example, when a newborn infant cries on first experiencing the world, it must be *feeling* something, though it has not yet developed language or self-understanding. Because it feels it is phenomenally conscious (p. 3)

with:

But our problem in explaining consciousness was never to give a physical account of what produces our *utterances*, as our utterances are not grounds for our belief in consciousness. Awareness of experience is the grounding (p. 130).

Leaving aside the dubious claim that a new born has no self-understanding and the fact that no ‘grounding’ for ‘awareness’ is given, think about ‘utterance’. We told that the infant is *conscious* because it *feels*, and we know it *feels* because it *utters cries*. So, is ‘utterance’ an indication of consciousness or is it not? Or could it be that the issue is a little more complicated than the page 130 quote would suggest?

Some years ago, Edward De Bono asked children to design a device which would harvest apples. One popular idea was a gadget which had a mechanical grab-hand on the end of an extendable arm. It also had a thin antenna which terminated in a small black dot. This dot was labelled ‘*apple detector*’. The children can be given credit for having recognised the hard problem. They dealt with it by reducing it to a dot and giving the dot a magical ability to produce a solution. For *apple detector* read *natural individual*. Rosenberg has performed a version of that magic dot trick.

### **Daniel C. Dennett**

*Sweet Dreams: Philosophical Obstacles to a Science of Consciousness*

Cambridge MA and London. MIT Press, 2005. 199 pp. £18.95 (hbk.). ISBN 0-262-04225-8.

*Reviewed by Chris Nunn*

Enthusiasm is a wonderful quality, but does have its downside. As Daniel Dennett has shown over the years, it can lead people to overstate good cases. Much of the content of consciousness can be regarded as illusory; so maybe consciousness itself is illusion-like. The concept of memes is interesting and may prove useful one day; so they are the best thing since sliced bread. In this collection of eight recent essays and lectures, Dennett revisits some of his enthusiasms. He writes with customary verve and punch, and the style is better than ever. He is truly philosophy’s answer to Ernest Hemingway. What about the content, though?

Well, some of it is quite slippery — the idea of ‘heterophenomenology’ for instance. This is the proposition that third person examination of people’s first person reports about what they believe their experiences to have been, provides a fully adequate basis on which to develop a science of consciousness. Taken in a weak sense, the idea is almost trivial. After all, even Skinner used ‘I observed’ statements about the behaviour of pigeons and rats in their boxes. All science is similarly grounded. But Dennett seems to mean something a bit stronger than this, and here problems arise. What constitutes an appropriate ‘statement of belief’ for example? In experiments, it is often a verbal report or a button press reporting a (belief about a) conscious experience. But what differentiates these from a pupil dilatation or a GSR response, reporting an *unconscious* experience? Most of us can readily respond to this, but Dennett can’t. Unlike most of us, he cannot readily appeal to the presence of a self or the occurrence of a *quale* for a

well-founded answer, because he argues elsewhere that both of these lack substance.

Chapter 3 is devoted to suggesting that consciousness and the tricks of stage magicians may have a lot in common as far as our experience of them is concerned. As Arthur Clarke remarked, though, any sufficiently advanced technology will seem like magic to those who don't understand it. Neither Dennett nor the rest of us know whether consciousness is or isn't an expression of nature's advanced technology. But he seems sure it isn't. Nice try Dan; good rhetoric! In chapter 4, he correctly points out that the notion of qualia is ill-defined. Then some sort of sleight of hand occurs and he is saying that (therefore?) the concept is pretty meaningless. When discussing qualia, he sounds like 'Grey Mary' discussing red before experiencing it. Could he, the reader may begin to wonder, be an example of the sort of 'perfect' zombie that he claims could not exist (but of course a zombie would claim that, wouldn't it?)

Unsurprisingly, he thinks that Grey Mary would not in fact learn anything new on first seeing a red rose. The main argument for this view is a series of variations on the theme that 'full' semantic or other information *about* red is equivalent to experience *of* red. My own guess, assuming information can in principle convert to conscious experience, is that conversion is a phase change occurring when some 'fullness' threshold is exceeded - as ice melts during a thaw. If so, Mary would learn something new on first experiencing red (though she might not need to see the rose to achieve this). Although she might predict a phase change of some sort, no scientist could work out exactly what it would be like from first principles.

The last three chapters sketch an outline of an 'emerging consensus' about the nature of consciousness, and look at some of the obstacles in the way of its universal acceptance. The main obstacle is Chalmers' Hard Problem, here regarded as a misconception; a view that is supported by better arguments than most of the others in the book. The claimed 'consensus' is that consciousness *is* the flow of 'fame in the brain', arising from information that both comes to be widely distributed and is effective by virtue of 'reverberating' for a time. Of course the wide distribution part of the package entails global workspace-like notions. Surely, one fears, Dennett is about to get sucked into the dreaded Cartesian theatre that normally accompanies such proposals. But no; a quick appeal to Damasio and, with one bound, he is free — another triumph of the magician's art!

Reading Dennett is a bit like watching a favourite tennis star in action. It's a virtuoso performance, stimulating, enthralling and often provocative. And one can quite easily be beguiled into feeling that the action on the court somehow encompasses the entire world. But of course a feeling like that is only an illusion.

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