

Book Reviews

Ralph Ellis

Curious Emotions:

Roots of Consciousness and Personality in Motivated Action

Amsterdam: John Benjamins, 2005, 238 pp.

ISBN: 1 588116 28 X

Reviewed by Anton Lethin

Ralph Ellis' new book develops an enactive account of emotions that makes room for 'higher' and even 'existential' ones. This view of the higher emotions puts them right at the centre of our most basic motivational structure. His book is unusually wide ranging, extending from the neurophysiology of how emotions are activated to discussing Maslow's 'self-actualization'.

A basic assumption is that emotions focus on holistic self-organization, rather than specific environmental events (p. 32). This was described by Maturana and Varela (1987) as autopoiesis. 'A self-organizing system initiates actions geared toward using the environment as needed to keep the system going in its definitive patterns' (p. 53). The organism spontaneously seeks what it needs, enacting rather than reacting. A stimulus does not cause an emotional response. Rather, the organism's ongoing emotional attitude evaluates how the stimulus can fit its autopoietic aims. This preconscious, anticipatory emotional intentionality may manifest in sensorimotor action imagery, preparing body and brain for action.

Motivation determines the focus of attention. Ellis reviews studies on change blindness, agreeing with Mack and Rock (1998, p. 18) that 'attention, when otherwise engaged, must be captured *before* perception can occur'. We must look for something in order consciously to see it. I like to view this as the organism preparing to see, sensitizing the pre-cortical visual system. Subcortical and limbic emotional

systems influence the direction of attention by means of this motivation; no consciousness takes place without it. (There are meaningful stimuli that always attract attention, even when it is initially elsewhere — e.g. a smiling face or our name being spoken.)

As I understand his proposals, attending to a stimulus starts with activation of a disposition or emotional circuit. He identifies three stages in becoming conscious of a perceived object:

- (1) Preselective gating determined by motivational categories of utility; mainly subcortical and anterior (frontal-parietal-cingulate).
- (2) Corticothalamic looping, which enhances, processes, and encodes stimuli once they penetrate the initial gating.
- (3) Resonance achieved between anterior attentional mechanisms and posterior processing, leading to consciousness. The P300 EEG evoked response is a manifestation of this stage.

He distinguishes between a self-organizing causal structure and a purely linear causal structure, explaining how goals in a self-organizing system are multiply realizable. One chapter develops a particular kind of dynamical systems account of the way motivational causation is rooted in the self-organizational purposes of the organism as a whole. It must be sufficiently complex to be multiply realizable with respect to its physical substrata and also 'able to play an active causal role in seeking out, appropriating, replacing, and reproducing the substrata that are needed to maintain the organizational pattern of the system' (p. 196). The causal work depends on how participating neurons are organized, which is a higher-level relational property of the complex dynamical system. 'A behavior pattern into which the system has a strong tendency to settle, and in which it can find a good degree of holistic balance, is called an "attractor" or "basin of attraction"' (p. 196). The whole can exert real causal power over its constituents by rearranging the background conditions.

At the base of this complex system in mammals are subcortical parts of the emotional system. This is where motivation arises, leading to the organism's intentional interactions with its environment. 'It is primarily the subcortical emotional areas that transmit the body's overall self-organizational imbalances, and thus its aims, through the primitive mammalian ventral base of the cortex, to the higher parts of the cortex' (p. 191). The cortical system develops a pathway to correct the imbalance. 'Any self-organizing system has a number of basins of attraction toward which it tends, and which one it chooses is

determined by the best way to maintain coherence within the system given environmental perturbations' (p. 99). One might speculate that emotional circuits have their own attractor dynamic, able to cause seismic shifts in other (cognitive and perceptual) landscapes. Panksepp suggested the same idea. 'In other words, the neurodynamics of the various basic emotional states may eventually be visualized as topographically unique chaotic attractors within the extended neural representation of the SELF' (1998a, p. 576).

He introduces the term 'extropy' to indicate a preference for higher-energy, more complex ways of maintaining homeostasis over lower-energy, less complex ones. He argues, agreeing with Kauffman, a dynamic systems theorist, that in a very complex system the pattern of activity to maintain its integrity can only occur at fairly high energy levels. He quotes other dynamical systems theorists who agree with this view (Alexander & Globus, 1996; Anderson & Mandell, 1996). He agrees with Panksepp (1998b) that 'only behaviors like seeking, curiosity, play, and some aspects of social bonding are motivated by a tendency to prefer maintaining this homeostasis via higher-energy basins of attraction...' (p. 90). Emotional activity is not just focused on consummatory satiation. If the whole body system settles into a low-energy basin for too long, it will be unable to maintain its definitive holistic pattern. This means that seeking higher energy states is not just a matter of preference but a need. Existential issues are correlated with these emotional systems. For example, 'in order to actualize ourselves we need to be in interaction with others' (p. 129). Love is an existential need. In a somewhat similar vein Hume described a natural 'love of truth' that motivates us to seek the truth (Ellis, 2005, p. 143). 'But even complex, highly cognized human emotions never lose their intrinsic grounding to these emotional primes, or else they cease to exist ...' (Watt 2005, p. 186).

The reader will be rewarded with other insights pertaining, for example, to how the arts help self-actualization, and how the embodied self relates to personality. He discusses the question as to how we can be aware of the embodied self, and refers to Gendlin's use of a 'bodily felt sense' and to Newton's 2000 article. Ellis has integrated the contributions of Varela, Panksepp, Newton, Kauffman (1993), Gendlin (1992) Walter Freeman (1988) and many others with his own insights and understanding. He explains how they fit together in a new synthesis, and lays it out in a comprehensible portrait. The breadth and depth are inspiring. Ellis shows us new ways of envisaging the relation of consciousness to emotion.

References

- Alexander, D. & Globus, G. (1996), 'Edge of chaos dynamics in recursively organized neural systems', in *Fractals of Brain, Fractals of Mind*, ed. E. MacCormac & M. Stamenov (Amsterdam: John Benjamins).
- Anderson, C. & Mandell, A. (1996), 'Fractal time and the foundations of consciousness: Vertical convergence of 1/f phenomena from ion channels to behavioral states', in *Fractals of Brain, Fractals of Mind*, ed. E. MacCormac & M. Stamenov (Amsterdam: John Benjamins).
- Ellis, R. (2005), 'The roles of imagery and meta-emotion in deliberate choice and moral psychology', *Journal of Consciousness Studies*, **12** (8–10), pp. 140–57.
- Freeman, W. (1988), 'Why neural networks don't yet fly: Inquiry into the neurodynamics of biological intelligence', *Proceedings of the IEEE International Conference on Neural Networks*, **2**, pp. 1–7 (San Diego: Institute of Electrical and Electronics Engineers).
- Gendlin, E. (1992), 'The primacy of the body, not the primacy of perception', *Man and World*, **25** (3–4), pp. 341–53.
- Kauffman, S. (1993), *The Origins of Order* (Oxford: Oxford University Press).
- Mack, A. & Rock, I. (1998), *Inattentional Blindness* (Cambridge, MA: MIT Press).
- Maturana, H.R. & Varela, F.J. (1987), *The Tree of Knowledge: The Biological Roots of Human Understanding* (Boston & London: New Science Library-Shambhala).
- Newton, N. (2000), 'Conscious emotion in a dynamic system: How I can know how I feel', in *The Caldron of Consciousness: Motivation, Affect, and Self-Organization*, ed. R. Ellis & N. Newton (Amsterdam: John Benjamins).
- Panksepp, J. (1998a), 'The periconscious substrates of consciousness: Affective states and the evolutionary origins of the self', *Journal of Consciousness Studies*, **5** (5–6), pp. 566–82.
- Panksepp, J. (1998b), *Affective Neuroscience* (New York: Oxford University Press).

Jenefer Robinson

Deeper Than Reason

Oxford University Press, 2005, 500 pp.

ISBN 0 199263 65 5

Reviewed by Claire McNiven

Imagine walking in the woods, along with Joseph LeDoux for instance (see LeDoux, 1998, pp. 163–65). A crackling sound occurs. You become alert, your pulse quickens. But, wait, it is only a dry twig breaking. You walk on, perhaps thinking yourself foolish. But, far from foolish, your brain is working perfectly. Sensory stimuli like the crackling sound travel to the fear system in the brain via two routes. One sends the basic data express delivery so that you may be prepared early on for action. The other, a slower mechanism, takes in the cognitive system en route and delivers a refined appraisal — recognising the dry twig for what it is.

This notion of two different processing mechanisms working on the same stimulus may not be new but remains potent, with implications

spanning science and art. It is at the basis of Jenefer Robinson's book. She projects the idea beyond the fear system to model her own theory of emotion — as a process which always incorporates both pre-cognitive and cognitive appraisal. She turns to detailed studies of emotion in great literature and great music in a bid understand how different elements of the process interact.

It may be natural to see sadness in the face of a St. Bernard dog even if the dog is not actually sad. Can great works of art, music and literature ever amount to nothing other than mere doggy expressiveness, or must they also (or instead) appeal to slower and more elaborate emotional and cognitive evaluations? Robinson weighs responses to art by the artist against emotional responses induced by the art in listeners, spectators or readers.

The artist's own emotional responses may not be explicit; they may be hidden in the response of a fabricated persona in a novel or musical piece; they may be implied in the underlying plot or commentary or perspective; or they may linger at a subconscious level, unintended by the author, identified only by the educated reader or the intuitive listener. Perhaps, Robinson suggests, art has to involve all this and more. Our emotional response to it gets us focussed and helps us understand what the work expresses — the whole emotional system acting as a symphonic, self-controlling process.

If you are not a musician, it would be a good idea to hear a recording or performance of Brahms' Opus 105 No. 2, 'Immer leiser' before reading Part four of the book, titled 'Music and Emotions'. I didn't do so, and, in some sense, put Robinson's theory to the test. In fact it was quite disconcerting, and a hollow experience, I found, to read so detailed an account of this piece of music as an emotional expression, without first hearing it and responding to it personally.

Although it contains references to scientific experiments and theories, there is no disguising that, at heart, this book has an artistic temperament and not a scientific one. It is passionate and imaginative; at times beautiful as it postures and obsesses. Robinson doesn't prove her theory, rather she plays with it. *Deeper than Reason* is bright and stimulating; it advances a wealth of possibility for the artist and thinker. However, if we appraise the book and the theory it presents too critically, we may find ourselves left with nothing more than dry twigs beneath our feet.

Reference

LeDoux, Joseph (1998), *The Emotional Brain* (New York: Simon & Schuster).

Shaun Gallagher*How the Body Shapes the Mind*

Oxford University Press, 2005, 284 pp.

ISBN 0 199271 94 1

Reviewed by Natika Newton

Shaun Gallagher's useful book is a good example of the second developmental stage of a new theory. This theory, the embodiment of cognition, holds that our minds are shaped by our bodies. It is no longer necessary to elaborate the faults of other theories, and Gallagher wastes no time in apology. His concern is to develop a conceptual structure in which two crucial concepts, *body image* and *body schema*, can be useful. While he notes that the terms are not fully sufficient for the task, their application is the theme that unifies the book.

Gallagher first examines the vagueness and contradictions that have plagued these terms. He holds that 'the notions of body image and body schema, once properly clarified, can go some distance (although, as we will see, not the full distance) in helping to work out a conceptual framework and an appropriate vocabulary for understanding the roles played by embodiment in the constitution of cognition' (p. 23). He sets a difficult task for himself here. He holds that the two concepts refer to 'two different but closely related systems' (p. 24), so intertwined that a clear distinction is elusive but well worth pursuing. Accordingly, Chapters 1 through 3 first tease the two concepts apart, and then explain how the systems they refer to interact while maintaining their distinct functions. Chapters 4 and 5 flesh out the concepts in discussions of phantom limb and expressive gesture.

Gallagher then applies his framework to matters such as the mind-body problem and knowledge of other people. He demonstrates growing empirical evidence of constraints on consciousness imposed by prereflective body awareness, including temporal structures and intentional perceptual experience. Gallagher uses various philosophical issues to refine the schema/image, concluding with some justified optimism about the value of his framework for future explorations of the body's role in human nature.

Gallagher first poses two questions that set the stage for the distinction that guides the book:

To what extent, and in what precise way, does one's body appear as part of one's perceptual field? To what extent, and in what precise way, does one's body constrain or shape the perceptual field? (p. 17)

These questions seem poised to lead directly to the image/schema distinction and to define it quite clearly. Gallagher, however, raises a problem: the history of deep terminological and conceptual confusion. H. Head (1926) and M. Merleau-Ponty (1945), have come closest to Gallagher's view of the distinction; more than 30 other writers are criticized. The examination of these is daunting to the reader, who wonders why Gallagher doesn't just replace the terms with some carrying less baggage. He holds, however, that they are valuable. His earliest explication of them follows:

A body image consists of a system of perceptions, attitudes, and beliefs pertaining to one's own body. In contrast, a *body schema* is a system of sensory-motor capacities that function without awareness or the necessity of perceptual monitoring. This conceptual distinction between body image and body schema is related respectively to the difference between having a perception of (or belief about) something and having a capacity to move (or an ability to do something). A body image includes more than occurrent perceptions, however. It can include mental representations, beliefs and attitudes where the object of such intentional states ... concerns one's own body. The body schema, in contrast, involves certain motor capacities, abilities and habits that both enable and constrain movement and the maintenance of posture. It continues to operate ... when the intentional object of perception is something other than one's own body. (p. 24)

Schema and image are interdependent; while the former does not appear in consciousness, it shapes and is influenced by conscious states. The body schema cannot be reduced to the level of neurons; it is a set of functional capacities carrying out conscious intentions. Normally one selects general means of attaining a goal, and the body schema takes care of the motor and other bodily implementation. Gallagher is reluctant to use other dichotomous terms, such as conscious/nonconscious or willed/ automatic (p. 18). Notably, he does not include intentional/nonintentional in this list, but would probably reject that also, holding that while only the body image is intentional, *nonintentional* does not capture the unique properties of body schema.

One gets an elusive feel for the distinction in this first chapter. It is a distinction between two sorts of dynamics in the embodied mind. It may be that the terms *schema* and *image* are initially misleading, because they normally refer to static structures. A schema is usually thought of as a model or framework, rather than a set of capacities. The term *image* is less problematic if one remembers that Gallagher's body image includes mental attitudes as well as conceptual and emotional components; it is not a semipermanent representation in a

specific sensory modality. With those connotations set aside, the project is easier.

Chapter Two attempts to discover clinical cases of double dissociation between schema and image. This is a worthwhile goal; Gallagher wants the distinction to be firmly based in empirical work. He is successful in one half of the dissociation; perhaps less so in the other. The first is the well-known pathology known as hemineglect: a stroke patient can 'lose her body image' while retaining her body schema. In contrast, Gallagher proposes a case of *intact* body image together with the loss of body schema in patient Waterman, who suffered from 'an acute sensory neuropathy in which large fibers below the neck have been damaged due to illness. As a result he has no sense of touch and no proprioception below the neck' (p. 43). Proprioception is the receiving of information from 'kinetic, muscular, articular, and cutaneous sources ... [and] ... vestibular and equilibrational functions' (p. 45).

Gallagher argues that Waterman's 'entire body schema system failed' (p. 44), while he retained 'visual proprioception and visual kinesthesia', regaining limited movement control using these and motor imagery. Waterman 'imagines a specific movement in order to accomplish it' (p. 50). This case is not obviously the other half of the desired double-dissociation: a complete loss of body schema with a somewhat intact body image. Without visual proprioception and kinesthesia, normally part of the motor imagery generating movements, the situation is ambiguous: perhaps he has lost central parts of both body schema and body image, while retaining some of each. It is unclear how visual proprioception and imagery provided movement control if not by activating programs in the motor cortex. Waterman was probably unable to generate motor images of desired actions, but only visual ones (Gallagher, personal communication). Another possibility is that the normal connection between otherwise intact image and schema was lost. Thus it is questionable whether this is true double-dissociation.

Waterman's case does, however, demonstrate complex interaction between conscious and unconscious movement control, the main concern of the book.¹ Perhaps the schema/image distinction is insufficient here. One can now understand the author's hesitation in defining it: he is then committed to accounting for many phenomena in those terms, whose value can again be questioned. While the Waterman example might not convince, however, the distinction remains viable.

[1] Another objection might cite recent arguments that consciousness does not initiate movement (Wegner, 2002). Gallagher's discussion of free will in Chapter 10 provides a convincing response.

In Chapter 3 the sense of self is discussed in the context of infant imitation and mirror neurons, which have figured extensively in recent literature. I won't analyse Gallagher's competent account.² One point, however, should be made. In explaining infant imitation Gallagher proposes that

[T]he phenomenon of newborn imitation suggests that much earlier [than the achievement of a *visual* notion of self] there is a primary notion of self, what we might call a proprioceptive self — a sense of self that involves a sense of one's motor possibilities, body postures, and body powers, rather than one's visual features. (p. 83)

The idea of a primary sense of self rooted in bodily abilities is appealing, avoiding regress by suggesting that proprioception is initially *constitutive of the self*, forming the basis for more sophisticated senses.³ It makes concrete the idea that embodiment frames all human cognitive activity, and that bodily metaphors structure even our most abstract concepts.

In Chapters 4 and 5 Gallagher discusses the phantom limb phenomenon and the nature of expressive gesture. Gallagher proposes

an integrative theory of gesture — one that integrates aspects of motor and communicative theories of gesture in a very precise way. Specifically, an integrative theory understands gesture to be, first, *embodied* (constrained and enabled by motoric possibilities); second, *communicative* (pragmatically intersubjective); and third, *cognitive* (contributing to the accomplishment of thought, shaping the mind). (p. 123)

Gallagher considers that expressive gesture and natural language point to a human nature that in some ways 'transcends embodiment', finding it implausible that expressiveness can be reduced to body-schematic forms of movement (p. 127).

The second part of the book elaborates the framework and examines implications for various philosophical problems. Chapter 6, 'Prenoetic Constraints on Perception and Action', contains a terminological shift. Opening paragraphs refer to *prenoetic* performances and their effects on

innate body schemas, body image, proprioceptive and ecological dimensions of experience, intermodal transformations, senses of

[2] New research supports an implicit prediction of this account and others. Dapretto *et al.* (2006) found through fMRI that both motor and visual areas were active during imitation tasks in ASD children and controls, while only in controls was there activity in pars opercularis, insula and limbic structures, also confirmed parts of the mirror neuron system.

[3] See Newton (1996), p. 177; also Wider (1997), who refers to 'the most fundamental level of self-consciousness as the body's awareness of itself' (p. 155).

ownership and agency, [and] the phenomenal structure of consciousness ... (p. 133).

Gallagher notes that '[i]n its prenoetic roles the body functions to make perception possible and to constrain intentional consciousness in various ways' (pp. 138–9), and that

[I]n all of these cases, changes or distortions introduced at the level of the prenoetic body or body schema result in changes or distortions in perceptual consciousness or motor behavior. (p. 146)

What does 'prenoetic' mean? In the introduction he says:

The second set of questions [the first concerned phenomenal aspects of the structure of experience] focuses on aspects of the structure of consciousness that are more hidden, those that may be more difficult to get at because they happen before we know it. They do not normally enter into the phenomenal content of experience in an explicit way, and are often inaccessible to reflective consciousness. I use the term prenoetic to signify these hidden aspects. (p. 2)

The body schema, he says, functions *prenoetically*.

Gallagher rejects distinctions other than body schema/body image to 'carve up the conceptual space in just the right way' (p. 18). What's wrong with 'prenoetic/noetic'? These are adjectives rather than nouns, but schema and image are to be understood dynamically. To be sure, even neural-level events are prenoetic, but then the title of Chapter 6 is misleading.

The above would be nitpicking but for the difficulty Gallagher himself acknowledges in understanding the schema/image distinction. Until Chapter 6, I thought I had it. Are 'body schema' and 'prenoetic mechanisms' *equivalent terms*? If not, why not? My suspicion is that Gallagher is here drawing on the Continental Phenomenology tradition for clarification. Without a similar background in the reader, however, the usage has the opposite effect. Erring on the side of oversimplification rather than overcomplexity might have had advantages.

Chapter 7 explores the Molyneux problem: whether a congenitally blind person, on attaining sight, would visually recognize shapes previously known only by touch. Chapter 8 analyses schizophrenia and senses of bodily ownership and agency: normal awareness of acting is also awareness that the actions are *mine*. Schizophrenia breaks this bond, producing experiences of apparently alien voices or alien thought control. Gallagher discusses efference copy and forward comparators in the motor system as factors in these cognitive disturbances. Phenomenological terminology here is helpful: Husserl (1991) analyses experience into protention — anticipation of the

future, and retention — working memory that retains immediately past experience. Gallagher proposes that

[t]he temporal structure that is shared by consciousness, cognition and action is evidenced in the precise timing that is covertly present in coordinated movement and consciousness of that movement. (p. 197)

Disruption in this structure can create illusions that ownership or agency of thoughts and actions is absent.

The common temporal structure in action and cognition is of major significance. I believe that even Gallagher, who presents it very convincingly, doesn't acknowledge its full extent. Gallagher has suggested that expressive language in some way 'transcends embodiment' because of his view that expression in the form of language and gesture, while making use of the body schema in their motoric aspects, entails an intersubjectivity unexplained by the body schema. He holds that intersubjectivity is effected by mirror neurons allowing infant imitation, but again, presumably, that imitation is more than just motoric copying. The issue also arises in Chapter 9, which discusses in similar terms the basis for intersubjectivity and autism. Newton (1996) argued that expressive language, as well as an understanding of other persons as intentional beings, could develop on the basis of infant action and imitation. As Gallagher also notes, mirror neurons allow representation of observed movements of others along with the experience of the proprioception of them. The perceiver experiences even as an infant her own intentionality in the structure — the protention/retention structure advocated by Gallagher — of her *own* movements. If those claims are correct, then there is no need to go 'beyond the body' to explain expressive language. It can be seen as a tool, usable only on other intentional beings, to induce in them feelings that the subject experiences herself and wants them to have, along with desired behaviour. Language, fortunately or not, serves to manipulate as well as to express, and even here it manipulates through the mutually comprehended intentionality of the two persons, not by a mechanistic stimulus/response sequence.

Chapter 10 contains a summary and a valuable discussion of free will. The protention/retention structure is used in the discussion of a 'specious present' — a period of consciousness that lasts longer than a time-slice and that provides the experience of a stable expanse of time to make conscious choices with 'real effects on behavior' (p. 239).

Gallagher's style is painstakingly detailed and carefully circumspect. Some seemingly uncontroversial points are defended at length, and Gallagher avoids making hasty claims in advance of specific

arguments, some not supplied until the later chapters. This method makes for somewhat difficult reading: the whole picture is not sketched in advance, and one cannot always see where the argument is going. Admittedly the subject does not easily lend itself to a broad-stroke outline. Gallagher examines fascinating empirical findings and case histories, and his account of the phenomenology of embodiment and its underlying structures is convincing and enlightening.

The embodiment movement is unusual in the history of philosophy. In its current form it is a recent development. But the main idea is not recent; it was prefigured not only by early phenomenologists, but also by psychologists like Margaret Washburn (1916), Heinz Werner and E. Kaplan (1952), and cognitive scientists like Margaret Boden (1982) who argues that abstract reasoning and problem solving involve structures of embodied activity (also Fauconnier, 1985).

Two things, I believe, prevented the idea from catching on widely before now. The first is the 30-year entrenchment of computationalism (Fodor, 1973). Because theories of mind often reflect contemporary technology, computationalism was hugely popular until its inadequacies became obvious. The other side of this coin is the contempt for Continental Phenomenology among many computationalists.

The second is the development of neuroscience to the point where predictions of embodiment theorists could be tested. Ever since the 1970s (Karl Pribram, 1976) there has been a stream of supportive empirical discoveries. For one example, recent work reveals the cerebellum's role in sequencing not only movements, but also steps in abstract reasoning (e.g. Ito, 1984; Schmahmann, 1996). Ellis (2005, pp. 9–13) discusses these predictions systematically.

This book is valuable both for clarifying the theory and encouraging competition among its promoters, and for generating more predictions. There are no indications that this progress will end soon. Gallagher has done the embodiment theory, and philosophy of mind in general, a great service.⁴

References

- Boden, M. (1982), 'Implications of language studies for human nature', in *Language, Mind and Brain*, ed. T. Aimon and R. Scholes (Hillsdale, NJ: Erlbaum).
 Dapretto, M., Davies, M.S., Pfeifer, J.H., Scott, A.A., Sigman, M., Bookheimer, S.Y., Iacoboni, M. (2006), Understanding emotions in others', *NatNeuro*, **9** (1), pp. 28–30.
 Ellis, R. (2005), *Curious Emotions* (Amsterdam: John Benjamins Publishing Co.).
 Fauconnier, G. (1985), *Mental Spaces* (Cambridge, MA: MIT).
 Fodor, J. (1973), *The Language of Thought* (Cambridge, MA: Harvard UP).

[4] I am grateful to Ralph Ellis and Chris Nunn for valuable comments on an earlier draft.

- Head, H. (1926), *Aphasia and Kindred Disorders of Speech* (Cambridge: CUP).
- Ito, M. (1984), 'Movement and thought: Identical control mechanisms by the cerebellum', *Trends in the Neurosciences*, **16** (11), pp. 448–50.
- Newton, N. (1996), *Foundations of Understanding* (Amsterdam: John Benjamins).
- Rizzolatti, G. and Craighero, L. (2004), 'The mirror-neuron system', *Annual Review of Neuroscience*, **27**, pp. 169–92.
- Schmahmann, J. (1996), *From Movement To Thought: Anatomic Substrates of the Cerebellar Contribution to Cognitive Processing* (New York: Wiley).
- Washburn, M.F. (1916), *Movement and Mental Imagery: Outlines of a Motor Theory of the Complex Mental Process* (Boston, MA: Houghton Mifflin).
- Wegner, D. (2002), *The Illusion of Conscious Will* (Cambridge, MA: MIT Press).
- Werner, H. & Kaplan, B. (1963), *Symbol Formation: An Organismic Developmental Approach to Language and the Expression of Thought* (New York: Wiley).
- Wider, K. (1997), *The Bodily Nature of Consciousness* (Ithaca: Cornell UP).

Chris Nunn

De La Mettrie's Ghost: The Story of Decisions

Macmillan, 2005, pp. viii + 228 hbk

ISBN 1 4039 9495 1

Reviewed by Anthony Freeman

The ghost of the book's title is 'the ghost of an idea': the idea that human beings are machines (as in Julien de la Mettrie's book *L'Homme Machine*, published in 1747) and that human agency and free will are consequently illusory. This ghost, says Chris Nunn, 'has, for over two hundred years, haunted our thinking on whether choices can be free', and it is time to deal with it. His strategy — maybe on the principle of 'set a thief to catch a thief' — involves the partial rehabilitation of that other philosophical ghost, the 'ghost *in* the machine', so scornfully named and shamed by Gilbert Ryle half a century ago.

According to Nunn, human beings are more like stories or films than machines, and even if we are best described as 'tales that write themselves through the mechanistic apparatus of our brains', identifying ourselves with the *tale* is not at all the same thing as identifying ourselves with the *machine*. This distinction is important, because the chief aim of this book is to show that free will and responsibility 'are properties of the tale, not of the apparatus with which it is told'.

The two big themes of the book are memory and what Nunn calls 'cognitive objects'. The former is what makes conscious choices possible, while the latter constitute a constraint on what options are open to a given person in a given social context. Together they create the conditions whereby the determinism implied by de la Mettrie's machine can be averted.

That ‘consciousness is a memory-related phenomenon’ is the second of the two axioms of free will set out at the start of this book. (The first is that ‘any distinctive conscious experience is associated with a distinctive neural state or activity’.) Nunn indicates three strands in the cord binding consciousness and memory. His first point is simple but fundamental. Unless a perception or cognition or emotion is remembered — at least for a few seconds — it cannot be reported, even to oneself, and by his reckoning so-called non-reportable ‘consciousness’ is not consciousness at all.

Second, there is the role of consciousness at ‘the crucial point in the memory process’ where information in short-term or working memory ‘gets pruned, edited, sorted and sent (or re-sent) for long-term storage’. This is the point where determinists will probe, questioning why the choice of which memories to store should be any more free than the choice of which wine to drink. For Nunn the significance of this second strand is that here is the place to look for what he terms ‘the *actuality* of free choice’, which only at some later time, not directly traceable to it, will produce ‘the *feeling* of free choice’.

This leads us to the final strand of the threefold cord. Our choices today will be influenced by memories from years or even decades before, and ‘these memories will nearly all have been either conscious or selected by consciousness at some time, but most will not be consciously recalled at choosing time’. It is out of these stored memories that the story is now being woven that constitutes the decision-making ‘I’ of today. More strictly, ‘what does the choosing is a temporally extended “I” that we never get to experience all at once ... an agglomeration of all the stories accumulated in one’s memory’.

But no man is an island entire of itself. Each self-related story is situated among other such selves, and all are influenced by each other’s unfolding memory-shaped stories. It is this social influence that Nunn describes in terms of ‘cognitive objects’. He is developing here ideas explored in his *JCS* paper ‘Archetypes and memes’ (1998), and he spends many pages — perhaps too many — exploring a few fascinating examples, such as the *Noble Roman* and the *Saint*, and *Weariness*. (This last is a persistent character who has turned up in different guises in different generations, variously known as neurasthenia, abortive poliomyelitis, post-viral fatigue syndrome, and — currently — ME). Nunn’s point is that such ideas provide a shared repertoire of terms and characters out of which the self-stories of a given community may be written. Like our individual store of memories they supply both the variety and also certain limitations on the tales we unfold into.

At the end the author brings his readers back to memory as the guardian of free will: 'Memory frees us from the de la Mettrie machine, while the fact that long-term memories can be edited and modified contributes to freeing us from social determinism.' I found myself interpreting his theory somewhat differently. I could see these two sources of influence acting upon each other, so that our personal histories (memories) free us from social determinism and our shared heritage (cognitive objects) frees us from individualised genetic/biological determinism.

For readers new to this whole discussion, the book does contain background chapters on aspects philosophy of mind and the scientific study of consciousness relevant to the freewill debate. Here one might quibble over details (e.g. categorising the Churchlands as identity theorists as distinct from eliminativists — when they are normally cited as the archetypal case of the latter — just seems perverse), but the overview generally is well judged and will not lead anyone seriously astray.

In any case, the book's real value lies in Nunn's own distinctive contribution in directing our attention away from the well-worn arguments of determinism and libertarianism, and making us focus on persons as narrative selves rather than biological machines.

Reference

Nunn, C.M.H. (1998), 'Archtypes and memes', *Journal of Consciousness Studies*, 5 (3), pp. 344–54.

BOOKS RECEIVED

Mention here neither implies nor precludes subsequent review

- Atad, Amit, *Perception: Neural and Mental Representations* (AA Publishing 2004)
- Chan, Alex C.H., *Synchronized Thinking: A Methodology for Intercultural Communication* (Red Publish 2005)
- Cozort, Daniel, *Highest Yoga Tantra: An Introduction to the Esoteric Buddhism of Tibet* (Snow Lion)
- Dalai Lama, H.H. The, *et al.*, *Yoga Tantra: Paths to Magical Feats* (Snow Lion 2005)
- De Quincey, Christian, *Radical Knowing: Understanding Consciousness Through Relationship* (Park Street Press 2005)
- Geshe Jampa Tegchok, *Transforming Adversity into Joy and Courage: An Explanation of the 37 Practices of Bodhisattvas* (Snow Lion 1999/2005)
- Goldberg, Stephen, *Consciousness: How the Mind Arises from the Brain* (MedMaster 2006)
- Haney, William S., *Cyberculture, Cyborgs and Science Fiction: Consciousness and the Posthuman* (Rodopi 2006)
- Mullin, Glen H.(trans. & ed. with Introduction), *The Six Yogas of Naropa* (Snow Lion 1996/2005)
- Vengha, Radha, *Brain, Personality & Addictive Behaviours: The Nature of Conflict* (Matador 2005)