Aping Mankind: Neuromania, Darwinitis, and the Misrepresentation of Humanity by Raymond Tallis. Acumen, 2011. 416 pp. $29.95 (hardcover). ISBN 978-1844652723.

What might physician and professor of geriatric medicine Raymond Tallis, and actor John Rhys-Davies, have in common? In Peter Jackson's epic film *The Lord of the Rings*, Rhys-Davies (as Gimli the dwarf) wields an axe with such consummate skill as to challenge, intimidate and lend a hand in the defeat of the evil orcs of Mordor; while in *Aping Mankind* Tallis (as philosopher and scientist) with a finely-honed axe of logic takes on perhaps equally formidable foes: those Cognitive Scientists possessed by "Neuromania" (p. 26) and Evolutionary Biologists obsessed by "Darwinitis" (p. 40) (called respectively "Neuromaniacs" and "Darwinitics").

An inapt comparison? Orcs are degenerate mutations from a once benign race, who would destroy or enslave all humankind, while Evolutionary Biologists and Cognitive Scientists are, certainly, benign professionals enriching the store of knowledge for the benefit of all. Yet as Tallis makes abundantly clear, many Cognitive Scientists believe that the mind is the brain, the brain is a computer, and since a computer has no self and does not exist in a world of intentionality, human beings have no selves and do not exist in a world of intentionality (p. 101).[1] Some biologists and psychologists, influenced by the twin premises that the brain is a product of evolution and that the mind is a computer-brain, reduce "mind" to a single-purpose biological mechanism programmed only to ensure the survival of the gene pool. The wedding of the mind-brain-computer theory to the Darwinian impulse produces a "grand synthesis of Darwinitis and Neuromania" against which Tallis mounts his argument (p. 145). He is convinced that these views, riddled as he believes with faulty logic and bad science, are in fact *dangerous*.

> The distinctive features of human beings – self-hood, free will, that collective space called the human world, the sense that we *lead* our lives rather than simply *live* them as organisms do – are being discarded as illusions by many, even by philosophers...Such views may have consequences that are not merely intellectually derelict but dangerous (p. 8).

In this densely packed, well researched and carefully argued volume of over 400 pages Tallis offers penetrating critiques of assumptions prominent in Neuroscience and Evolutionary Biology and lays out what he considers to be their potential negative consequences. The book moves on to a "Defense of the Humanities" and a stimulating though inconclusive effort to provide a solution to the chief problem raised by his analysis of the mind-body relation.

What is the Danger?

Tallis argues that the conclusions of "Neuromaniacs" (NMs) and "Darwinitics" (DTs),[2] have "added weight to traditional determinism" with its corollary that there is no such thing as personal responsibility (pp. 49-50). Although it is not new to debate the existence of free will, Tallis holds that "the incursion of neuroscience into our sense of ourselves as conscious agents is

more ‘up close and personal... [and] the personal gives way before the impersonal” (p. 51). Thus he cites the view of neurophysiologist Colin Blakemore (p. 50),

> The human brain is a machine which alone accounts for all our actions, our most private thoughts, our beliefs...All our actions are products of the activity of our brains.

In referring to “private thoughts and beliefs,” this does not go far enough; a significant theme in neuroscientific circles is “eliminative materialism” which argues that thoughts are merely the flow of physical energies within the computer-brain, and beliefs are illusions of a “folk psychology” eventually to be replaced by a new conceptual framework provided by neuroscience.[3] And since the self is an illusion, the idea of any thought being “private” is also in error, since there is nothing for a thought to be private *to.* The brain is a machine which has no thoughts and no beliefs. And “you” are “your” brain (but there is no “you”).

Surely, though, the vast majority of humanity will just go right on “thinking” that “they” have “beliefs” (even NMs and DTs seem unable to avoid this illusion), so why worry? Tallis’ first concern is a perceived potential for fostering human self-hatred. His book begins with a keynote citation from *Straw Dogs* by John Gray, Professor of European Thought at the London School of Economics, in which Gray is reported as saying that the lives of humans, who are “rapacious, destructive, predatory animals,” are “obviously not worth preserving,” and have “no more meaning than that of a slime mould” (p. 1). Thus Tallis’ first concern has to do with *psychological* consequences: encouragement of “despair and inactivity” (p. 64).

A second, “even more frightening,” concern rests on a proposed NM solution to the destructive aspect of the human animal-machine: Legal and governmental decision-making should be determined by neuroscientific understanding of the “brain’s system of justice” and of how “the brain reacts to conflicts.” Although this may appear extreme and even irrational (if the brain is that of a rapacious predatory animal, why should anyone trust its system of justice?), such ideas are in fact being considered (p. 65, citing Zeki and Goodenough, 2006.)

A third concern, characterized by Tallis as “sinister,” is what may follow from the notion that “there is more of the animal in some people than in others.” Tallis here cites views from which it would follow that we should treat mentally handicapped human beings as we would animals (p. 68). Tallis does not go so far here as to suggest whether the *determination* of who, or of what group or population, is handicapped, should be placed in the hands of NMs and DTs, but it is a reasonable question to ask.[4]

One might think such views are of little consequence because supported only within relatively small areas of scientific study and academic commentary. Not so: Tallis notes that the idea of neuroscience having “dominion over territory that once belonged to the human sciences” is fostered not only incessantly in the popular press but in the burgeoning growth of disciplines such as neuro- or evolutionary- jurisprudence, economics, aesthetics, theology, architecture, archaeology, and ethics (p. 58).

Of particular interest to this reader is Tallis’ commentary on the incursion of NM/DT assumptions in aesthetics. It would seem reasonable to hold that the existence of the arts testifies most strongly against the notion that human beings are computers driven by neuro-biological programming. What has a machine after all to do with ballet, opera, string quartets, or the Night Café? But Tallis reports a different view.

> The aficionados of "neuroaesthetics" explain the impact of different kinds of art by referring to what is seen on fMRI scans...The creation of art itself is a neurally mediated activity by which the artist, unknown to himself, behaves in such a way as to promote the replication of his genetic material (p. 58).

If Vincent van Gogh had understood this explanation of his artistic endeavors, one could readily understand why he sliced off his ear: his entire life's work had no more value than the satisfaction of lusts in copulating animals. (But since he had no knowledge of neuroaesthetics, there must have been something else wrong with his brain.)

A key term here is *value*. In the purposeless world of material science (and of eliminative materialism) there can be no values, since value rests on beliefs, purposes, goals, satisfactions and disappointments. Divesting the world of intentionality is divesting it of meaning, and the psychological condition of living in a meaningless world is Nihilism (p. 66). Over a hundred years ago, Nietzsche came to the following conclusion upon considering the rise of science, the desire for supernaturally sanctioned truth, and the relation between value and purpose:

> What I am now going to relate is the history of the next two centuries. I shall describe what will happen, what must necessarily happen: *the triumph of Nihilism*...What does Nihilism mean? – That the highest values are losing their value. There is no bourne. There is no answer to the question: "to what purpose?"...Thorough Nihilism is the conviction that life is absurd" (Nietzsche 1910, Preface and p. 8).

Seen from the perspective provided by Tallis, one may wonder whether this prediction is well on its way toward fulfillment. Surely it is cavalier, with the presumed authority of science, to divest the world of meaning by intentionally denying the existence of intentionality.[5] But whether the dire result feared by Tallis is avoidable or inevitable would seem to depend on the question of whether the identification of humanity with animality and of the mind with a computer-brain is founded on truth or scientistic confusion.

The Two Towers of Scientism

Of course Tallis is speaking not of Neuroscience or Evolutionary Biology in general, but only of the allied edifices of NM and DT. Tallis devotes Chapters 3 and 4 to a scathing critique of each in turn. There are four primary lines of argument which he raises against NM: argument from methodology and technology, from causality, from the phenomenological description of consciousness, and from logic.

Regarding the first, Tallis describes limitations of fMRI brain scans (p. 74), oversimplified experimental designs (pp. 74-77), evidence for non-modular distribution of brain activity such as memory (p. 80) and other technical and procedural limitations. However, since it can always be argued that such limitations may, with better technology, be overcome, Tallis must take into account other dimensions of the problem.

The first of these is the attribution of the causes of conscious states to specific areas of the brain. Giving a *causal* status to putative functional modules in the brain raises an acute problem of conceptual confusion among "three quite different relations: correlation, causation and identity." Mere correlation of a particular area of brain activity with some specific mental

activity cannot serve as proof that a specific locus of brain activity is the sole cause, or even identical with, the associated mental activity (p. 83). Against the assumption of discrete modules, Tallis points out that when a particular area of the brain becomes active in the presence of some stimulus, "much more of the brain is already active" (p. 75). Tallis shares this point with other critics who hold that the brain is a necessary but not sufficient condition for consciousness, and that one cannot separate the brain from the nervous system as a whole (e.g. Rockwell 2007, Chemero 2009).

What Tallis adds, however, is a depth of detail and a broadened perspective not usually encountered in similar critiques. Tallis opens up the greater sphere of experience that he posits is systematically neglected in the discussion: the human *world.* "Even those who locate the roots of consciousness in the brain should still recognize that brains together create a space that cannot be stuffed back into the brain" (p. 235). For example, speaking of studies claiming to have found the location of unconditional love in the brain by recording brain activity while the experimental subjects look at photographs of those with whom they are deeply in love, he says "anyone who is not a Martian" knows that

> Love is not like a response to a simple stimulus such as a picture. It is not even a single enduring state, like being cold. It encompasses many things, including: not feeling in love at that moment; hunger; indifference; delight, wanting to be kind; wanting to impress; worrying over the logistics of meetings; lust; awe; surprise; joy; guilt; anger; jealousy; imagining conversations or events; speculating what the loved one is doing when one is not there; and so on...The more you think about the idea that human life can be parcelled out into discrete functions that are allocated to their own bits of the brain, the more absurd it seems (pp. 75-80).

In many ways Tallis' book is an extended, impassioned evocation of this greater world. This is his third argument, that from the phenomenological description of human experience, the explanation of which he says is not even remotely approached by NMs or DTs. By limiting the concept of experience to an artificially narrow range, simplistic experimental designs and broadly-brushed conclusions are made to seem reasonable. Tallis, we might say, is inviting NMs and DTs, like the denizens of Plato's Cave, to come out into the vastly wider realm of truth, fact, belief, error, beauty, love, community, and in short, intentionality; putting into proper perspective the endeavors and findings of science as these may enrich, rather than impoverish, that world ((p. 91 passim). [6]

Logic and Language: A Failed Attempt at Conceptual Judo

Here however we are brought to the fourth of the criticisms mentioned above: logic. The claim that intentionality is an illusion, and that such things as beliefs do not exist, appears to plunge NMs into a morass of self-contradiction: they believe that their beliefs do not exist; that they them*selves* do not exist. But as Tallis puts it, "it is not possible to deny viewpoint" (pp. 112, 336-338). Against this, neuroscientists have argued that such seeming contradictions emerge only because we (temporarily) must use the defective language of "folk psychology;" but just as soon as the neuroscientists provide a linguistic framework reflecting the true reality, such contradictions will simply go away (cf. Churchland 1986).

This defense is like a move in martial arts: use your opponent's strength against him. But that move can easily be reversed. The language the NM calls for in fact already exists. It is the language of the physical sciences. Only the purely physical description of the universe is real and whatever does not fit that framework is an illusion. And that is an example of what philosopher John Dewey long ago termed *the* philosophical fallacy: taking objects of "selective preference" and converting them into "antecedent existence," i.e. into the fundament of reality (Dewey 1958 pp. 25-30). The NM is not asserting a scientific truth but is instead promulgating a metaphysical doctrine.[7]

Although Tallis never cites Dewey (he is not even listed in the 16 small-type pages of references), Tallis' argument from the quality of human experience is strongly reminiscent of Dewey's views. Advocating substitution of the language of the Physical Sciences for the language of intentionality creates a schism between the specialized sciences, with their plethora of abstract theoretical entities, and the world of experience and common sense out of which those sciences grew and to which they are irretrievably related. The allegedly stable, certain and unchanging law-like character of the physical sciences, in contrast to the unwieldy face of the experienced world, promotes the "refined objects" of science to a level of selective preference as the pure reality. Then

> The stable ideal meanings which are the fruit of nature are forbidden...from dropping seeds in nature to its further fructification (Dewey 1958 p. 58).

As I read him, this is the central point of Tallis' deeply felt and magnificently argued concern: Instead of running away from the world of common sense and calling it pejorative names such as "folk psychology," science should always, no matter how abstract its theory becomes, return to that world and give back with interest what it has taken. The startling degree to which the neuro- and evolutionary- "pseudosciences" manage to impoverish the world is starkly highlighted in a summary Tallis gives in Chapter 9 (p. 337).

Misplaced Anti-Animality

Tallis to this point has presented a richly detailed and convincingly argued position, and he does this in a highly readable – at times entertaining – style. But now we come to a less satisfactory discussion. Tallis still must put Evolutionary Biology in its place. Here he commits a large-scale blunder. In order to reject the idea that all human behavior is explained by reference to animal instinct driven exclusively by the mechanism of natural selection, he finds himself having to advocate a yawning gulf between animal life and human experience. The form his argument takes is to mount a wholesale denigration of animal existence. Human behavior is *fundamentally* different (p. 233). He comes close to concatenating animals with insentient matter (p. 232). Animal vision is "programmed response" while that of humans is "the gaze which looks out and sees" (p. 171). Animal life, in contrast to the human "shared world" is rather a world of "bumped into objects and forces" – seeming to suggest that animals are little different from billiard balls. Animal emotions are exhausted by "the rapid heart rate and increased respiratory rate of a beast being prepared for fighting, fleeing, feeding or copulating" (p. 233). It is, he says, "bad biology to assimilate animal emotions to human feelings." He does not appear to realize that it is also bad biology to assimilate animal behavior to that of billiard balls.

Animals as he sees them also do not live in any dimension of *time*. While human experience has "temporal depth" (p. 250), the behavior of animals such as crows caching food for future use does not indicate any "sense of future need" but is rather a mechanical "hard-wired" activity with no relation to a felt need or the existence of a future (p. 134). On such a view an animal chasing a prey, for example, is not pursuing a goal within a temporal dimension, but is merely reacting mechanically from one instant to the next, with all the composite instances being separate billiard-ball reactions to separate stimuli. There is no *telic* quality (possibly rudimentary intentionality) to animal behavior – this despite the testimony of biologists like Edmund Sinnott, who speaks of the "persistent directiveness or goal-seeking that is the essential feature of behavior and thus finally the basis of all mental activity" (Sinnott 1955 p. 52).

Sinnott is not a DT. He does not reduce human behavior to that of animals. But he posits a *continuity* in the development of consciousness from animal to human life. Such continuity works both ways: there is something of the animal in the human, but there is also something of the human in the animal. Tallis is exaggeratedly wary of admitting continuity as it might apply to consciousness because he mistakenly feels that to admit *any* incremental or significant developmental flow from animal to human is to give in to the DTs. We shall see however that although Tallis repeatedly gives the (sometimes excessively brutal) impression that nonhuman animals have nothing like a conscious existence, he cannot hold firmly to this position, and it causes him trouble when he arrives at his concluding attempts at a remedial theory.

The Wrap-up: A Stimulating Theory that Stumbles

His first step is to highlight the difficulty which his own argument has created: the acute difference between the human world and its biological and material predecessors. He has concluded that natural selection is a "mindless, pointless process" that has no goal and is thereby in stark contrast to the human world. He believes this, he says, because he is an atheist humanist. In other words, in his view to believe that evolution has a goal is to believe in a supernatural designing deity (p. 209). It is here that Tallis' penetration begins to weaken. For one thing, the possibility that there might be *some* degree of directionality, i.e. a telic property within the sweep of evolution but not necessitating a designing deity, does not seem to occur to him (or perhaps he does not think it worthy of consideration). He does not distinguish between the having of *goals* and the having of one overall *Goal* (my capitalization). Evolution has no *Goal* but humans are able to "consciously aim at stated goals," which, he concludes, means that "humans are not a part of nature or not entirely so" (P. 210).

The syllogistic reasoning appears to be this: Evolution is part of nature; evolution has no *Goal*; humans have goals; therefore humans are not part of nature (or not entirely so). The difference between *Goal* and goal destroys this syllogism. It could be recovered by the following: Animals have no goals (*sans* capitalization); humans have goals; therefore humans are not animals (or not entirely so?). In order to make this work, however, he must deny that a hawk in search of prey, a titmouse building a nest, or a beaver chewing a branch off a tree for use in constructing a dam, have goals; or if we must say they have goals, we must distinguish between animal goals and human goals. Human goals are conscious, anticipated, explicit. Animal "goals" are so only by misplaced analogy. The animal is without consciousness. It has no existence in time, no past or future, no anticipation. For the animal, nothing is or can be "explicit."

This appears to me to be what Tallis wishes to say – when he is attacking Darwinitics. But now a different story arises. If as he has argued, humans are "not a part of nature or not entirely so," the absolutely necessary requirement for a coherent view is to answer, without appealing to supernatural intervention or alien devices hidden in monoliths, the question: *how did humans get to be so different?* (P. 210). This Tallis attempts, although tentatively, to answer.

Let us review once again the immensity of the difference as understood by Tallis. It is not the difference between, for example, ordinary chimpanzees and "exceptionally gifted" chimpanzees (p. 212). It is not a minute incremental step on a ladder of progress responding to some teleological impulse inherent in the processes of life. It is not simply the advent of "a larger frontal cortex" (p. 213). No. It is a shock, a jolt, the advent of something stunning. And that something, Tallis has it, is the human hand with its opposable thumb, its ability to be used for grasping and pointing, and in particular its placement upon an upright bipedal body that allows it to be seen at a distance from the head but at the same time to be felt as a part of the whole: "The thumb...taken in conjunction with the upright position, transformed the primate hand into a proto-tool" (p. 213).

Yet the question remains: What has a better paw got to do with bridging his carefully, painstakingly constructed, immense gulf between unconscious animal life and the world of consciousness inhabited by humans? Tallis engages in an elaborate account of what he considers the reasons that "something so small as the hand...should have had such momentous, indeed massive, consequences." It is a clever, stimulating and interesting demonstration of the functional relationship between the hand, upright posture, the opposable thumb, the extending of the arm and the visibility to the eye of the hand's actions. And it has a convincing ring to it. But none of it answers the fundamental question as to how something totally unconscious and without any sense of self or existence in time, can come to experience temporal depth, become conscious – and become conscious of itself *as a self*. It is here, at the crucial moment, where Tallis' scenario collapses.

> The hand...made the human animal, our hominid ancestor, uniquely aware of its own actively engaged body. This awoke the dim intuition "That I *am* this body" (p. 212).

So the key, the turning point, is the "awakening" of a *dim intuition*. But how can an an intuitionless being have an intuition? "Intuition" belongs to the language of mind; an intuition can occur only to a self – even if it is "dim" and is occurring to a limited kind of self. Otherwise "dim intuition" is just a couple of words explaining nothing. And calling this intuition *dim* admits of degrees. *Something* was there, some kind of self-consciousness, as a necessary condition for the having of any intuition whatsoever. Tallis, in other words, is forced at this final juncture to admit to some form of developmental continuity from animality to humanity; from animal consciousness to human consciousness.

What he has stumbled upon, driven by the force of his own reasoning, is a theoretical position similar to that of thinkers such as Pierre Teilhard (de Chardin) another profoundly relevant and much-neglected philosopher who is also not within the sphere of Tallis' references.

> Properly observed, even if only in one spot, a phenomenon necessarily has an omnipresent value and roots by reason of the *fundamental unity of the world*... 'Consciousness is completely evident only in man' we are tempted to say,

> ‘therefore it is an isolated instance of no interest to science.’ ... ‘Consciousness is evident in man’ we must continue, correcting ourselves, ‘therefore, half-seen in this one flash of light, it...is surrounded by an aura of indefinite spatial and temporal extension.’ In the world, nothing could ever burst forth as final across the different thresholds successively traversed by evolution...which has not already existed in an obscure and primordial way” (Teilhard 1961, my italics).

My point here is not to argue for the validity of Teilhard’s view, which is nonetheless vastly more accommodating than Tallis’ clumsy attempt to slip consciousness in where he has previously fought to deny it. The point is that Tallis cannot get out of his dilemma without admitting a prior development of degrees of consciousness within the evolutionary process, thereby arriving at a position close to that of Teilhard.

The real contrast, then, seems to me to be between the closed world empty of consciousness and deprived of selfhood as envisioned by the NMs and DTs sitting huddled with the others in Plato’s cave, or an open world of *continuity* within which human consciousness is a part of nature simply because in one degree or another, the spawning of consciousness is an entirely natural phenomenon and extends somehow to the roots of matter.[8] If the latter is one’s choice, and if that choice means a revolution in our understanding of matter and of a healthier relation between science and humanity, so be it. It should be a conclusion with which, however reluctantly, Tallis must agree.

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ENDNOTES

[1]. "Intentionality" refers essentially to the sphere of meaning, as evidenced in what are called *propositional attitudes* such as "hopes, desires, fears and, more broadly, beliefs, which are directed on objects...or clusters of possibilities that are felt to be other than the subject" (p. 101).

[2]. These capitalized abbreviations are my own. Since the terms in full have a rhetorical purpose but nevertheless do refer to specific theoretical attitudes, the more or less neutral abbreviations are preferable.

[3]. For a description and criticism of these views see Wilkenson, Will, "Churchland Debunked, Commonsense Psychology Vindicated."
http://enlightenment.supersaturated.com/essays/text/willwilkinson/churchlanddebunked.html

[4]. Tallis gives a more incisive discussion of this concern in his small volume *Why the Mind is not a Computer*, pointing out how scientistic ideas contributed to oppression of the Jews in Germany and the Kulaks in Soviet Russia (Tallis 2004, p. 26).

[5]. "Primarily meaning is intent and intent is not personal in a private and exclusive sense...meaning is the acquisition of significance by things in their status in making possible and fulfilling shared cooperation" (Dewey 1958 p. 180).

[6]. Tallis' view of a world here is reminiscent of the concept of "Experience" as the fundamental category of being and the obligation of science to enrich, rather than diminish it, as articulated by John Dewey (Dewey 1958,Chapter 1).

[7]. Dewey's philosophical work has emerged from undeserved obscurity recently as a major influence in critiques of the mind-brain identity theory (Noe 2009, Chemero 2009, Rockwell 2007).

[8]. Considering matter as an expression of energy, Teilhard proposed a revision of the concept of energy. This involved his hypothesis of the existence of a radial energy, which is the energy leading to organization, specifically the functional organization of matter around a "center" which he called the within of things (Teilhard 1961 p. 63 ff.). The question of the relation of this concept to standard physics has been discussed at length in O'Manique 1969.