

## **CRITIQUE OF NEUROSCIENCE – Walsh notes on Raymond Tallis article**

- The article by Raymond Tallis is a good general introduction to phenomenology. What gave rise to phenomenology was exactly the critique of positive science that Tallis describes in his essay. Most importantly, positive, objective science (like the materialistic, deterministic version of “science” reflected in our textbook) is unable to account for human consciousness, perception, memory, meaning, mind, the self, personality, conscience or human experience in general.

Edmund Husserl (the ‘father’ of modern phenomenology) wanted to establish phenomenology as a science of consciousness. Ultimately, he would be unable to achieve this. But, in the process of not achieving that goal he would establish phenomenology as a major school of philosophy and psychology. Husserl’s seminal work would influence many followers, right down to the present day. This can clearly be seen in the development of Phenomenological Psychology.

**Phenomenology** is the study of how things appear in our conscious perception. (“ology” = ‘the study of’ & “phenomenon” = ‘appearance’. Thus, phenomenology can be understood as the study of how things appear to us in our subjective consciousness.]

Phenomenology does not agree with either materialism or determinism. It thinks that these views are “naïve” because they start off from inadequate presuppositions.

**Materialism** - Materialism is a form of philosophical monism which holds that matter is the fundamental substance in nature, and that all things, including mental states and consciousness, are results of material interactions.

**Determinism** - the doctrine that all events, including human action, are ultimately determined by causes external to the will. Some philosophers have taken determinism to imply that individual human beings have no free will and cannot be held morally responsible for their actions.

As you will learn from Tallis’ article, neuroscience is grounded in materialism and determinism. Because of this, Tallis argues that neuroscience will never be able to provide a full account of human consciousness, etc., just as Husserl argued that positive science could never account for human consciousness, etc. You should be able to understand Tallis’ basic arguments for why neuroscience (or any positive science) will be unable to do this.

Thus, Tallis’ criticism of neuroscience provides a very good introduction to the basic premises of phenomenology (and phenomenological psychology) since the clearly described arguments he presents utilize a phenomenological perspective that is very similar to that used by Husserl to establish phenomenology as a way of investigating human consciousness, meaning, significance, and human subjective experience in general.

Use the notes below to focus in on key aspects of Tallis’ argument.

**ARTICLE: What neuroscience cannot tell us / [Raymond Tallis](#)**

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**Necessary & sufficient conditions** – make sure you understand these two ideas. The brain is *necessary* for consciousness and human experience, but it is not a *sufficient* cause to fully or adequately explain consciousness or human experience.

How and why does Tallis use the term “**neuroscientism**”? (neuroscientism = “science-based faith” (See: Scientism, scientific – this means, *like* science but not really science like chemistry or biology is a science). A similar term is “neurocentrism”

**“Scientistic”** = characterized by or having an exaggerated belief in the principles and methods of science... of, relating to, or characterized by **scientism**.

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Neuroscience will NEVER be able to account for consciousness, mind, perception, desire, etc.

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The brain is a material object, as asserted by neuroscientists. This fact alone, Tallis claims, will ensure that neuroscience will never be able to account for the human mind. Why is this the case?

**The Outward Gaze**

**Intentionality** – the key to understanding human consciousness... Intentionality designates the way that we are conscious *of* something, and that the contents of our consciousness are thus *about* something; and, in the case of human consciousness, that we are conscious of it *as* something other than ourselves.

**Intentionality is utterly mysterious from a materialist standpoint. This is apparent first because intentionality points in the direction opposite to that of causality: the causal chain has a directionality in space-time pointing from the light wave bouncing off the object to the light wave hitting your visual cortex, whereas your perception of the object refers or points from you back to the object**

Ironically, by locating consciousness in particular parts of the material of the brain, neuroscientism actually underlines this **mystery of intentionality**, opening up a literal, physical space between conscious experiences and that which they are about. This physical space is, paradoxically, both underlined and annulled: The gap between the glass of which you are aware and the neural impulses that are supposed to be your awareness of it is both a spatial gap and a non-spatial gap. The nerve impulses inside your cranium are six feet away from the glass, and yet, if the nerve impulses *reach out* or *refer* to the glass, as it were, they do so by having the glass “inside” them. The task of attempting to express the conceptual space of intentionality in purely physical terms is a dizzying one.

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A couple of good questions re the “backward glance” ‘upstream’ (so to speak)

Let us tease out the mystery of intentionality a bit more, if only to anticipate the usual materialist trick of burying intentionality in causation by brushing past perception to its behavioral consequences. If perceptions really are material effects (in one place — the brain) of material causes (in another place — the object), then intentionality seems to run in the contrary direction to and hence to lie outside causation. That your perception of the glass requires the neural activity in your visual cortex to reach causally upstream to the events that caused it is, again, utterly mysterious.

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Why intentionality matters!!! Very important point!!!

Examination of neural activity reveals only an unbroken causal chain passing from sensory inputs to motor outputs. Intentionality is significant because it is that which opens up the otherwise causally closed physical world. It lies at the root of our being a point of departure in the world, a site at which events originate — that is, of our being *actors*. And the weaving together of individual intentional spaces creates the human world — that shared, public, temporally deep sphere of possibilities, that outside-of-nature which makes our individual and collective human lives possible. It lies at the origin of everything that distances us from the material world. Without intentionality, there is no point of arrival of perceptions, no point of departure for actions, no input and output, no person located in a world. It is intentionality that opens up the present to the absent, the actual to the possible, and the now to the past and the future, so that we are able to live in a world that is an infinitely elaborated space of possibilities, rather than being simply “wired in” to what is.

Focusing on intentionality and placing it in the context of a materialistic, neuroscientific theory underlines what an extraordinary phenomenon perception is. It is that in virtue of which an object is revealed to a subject; or, rather, that in virtue of which the experiences of a subject are the revelation of an object. And this brings us to the heart of the trouble that the neural theory of perception is in: its central claim is that the interaction between two material objects — either directly, such as by touch, or indirectly, such as by vision — will cause one to appear to the other.

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How objectifying science makes lived-appearances disappear. *Must understand this!*

Physical science begins when we escape from our subjective, first-person experiences into objective measurement, and thereby start to aspire towards Thomas Nagel’s “view from nowhere.”

For the physicist, light is not in itself bright or colorful; rather, it is a mixture of vibrations of different frequencies in an electromagnetic field.

Physical science is thus about the marginalization, and ultimately the elimination, of phenomenal appearance. But consciousness is centrally about appearances. The basic contents of consciousness are these mere “secondary qualities.” They are what fill our every conscious moment. As science advances, it retreats from appearances towards quantifying items that do not in themselves have the kinds of manifestation that constitute our experiences.

## Pages 7 & 8

Skip pass the whole argument with Searle...interesting though it is

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What physical science is blind to

conscious experiences and observed nerve impulses are both appearances. But nerve impulses do not have any appearance in themselves; they require a conscious subject observing them to appear — and it is irrelevant that the observation is highly mediated through instrumentation. Like all material items, nerve impulses lack appearances absent an observer.

Material objects *require* consciousness in order to appear.

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The search for neural correlates of consciousness has in fact turned up clusters, patterns, and locations of activity that are not in any significant respect different from neural activity that is not so correlated. What is more, “clusters,” “patterns,” and so forth also require an observer, to bring them together into a unity and to see that unity *as* a unity. That which requires an observer cannot be the basis of an observation.

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### Mysteries of the subjective self

A. Consciousness as a unity in multiplicity

Persons — or selves — have two additional features which cannot be captured in neural terms.

The first is **unity in multiplicity**. At any given moment, I am aware of a multitude of experiences: sensations, perceptions, memories, thoughts, emotions. I am *co-conscious* of them — that is, I am aware of each of them at once, so that they are integrated into a unity of sorts.

When, however, I see my red hat on the table, over there, and see that it is squashed, and feel cross about it, while I hear you laughing, and I recognize the laughter as yours, and I am upset, and I note that the taxi I have ordered has arrived so that I can catch the train that I am aware I must not miss — when all of these things occur in my consciousness at once, many things that are kept apart must somehow be brought together. There is no model of such synthesis in the brain. This is the so-called “binding” problem.

Here is the challenge presented to neuroscience by the experienced unity *and* multiplicity of the conscious moment: that which is brought together has also to be kept apart. Consciousness is a *unification that retains multiplicity*.

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B. The “temporal depth” issue

The other distinctive feature of subjectivity is **temporal depth**. The human subject is aware of a past (his own and the shared past of communities and cultures) and reaches into a future (his own and the shared future).

There are many neurophilosophical accounts of memory, but they have one thing in common: they see memory as, in the slightly scornful phrase of the philosopher Henri Bergson, “a cerebral deposit.” Memory is, to use the slippery term, “stored” as an *effect* on the brain, expressed in its

altered reactivity. This theory has been demonstrated, to the satisfaction of many neurophysiologists and cognitive neuroscientists, in creatures as disparate as apes and fruit flies. Some of the most lauded studies on “memory,” such as those that won Columbia University neuroscientist Eric Kandel his 2000 Nobel Prize, have been on the sea slug.

In reality, Kandel did not examine anything that should really be called *memory* — it was actually *altered behavior* in response to training by means of an electric shock — essentially a *conditioned reflex*.

Memory!!!!

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Key point about memory: conditioned reflexes are not cognitive memory (human-type) memories. Animals and humans do not remember in the same way. Why not?

*Conditioned reflexes are not Cognitive Memory*

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The conscious individual alone can see the present state as a sign of a past state and pick out one present state as a sign of one of the events that brought it from its past state to its present state.

This final point illustrates how the effect of an experienced event is a *record* of this event only to an observer. But the brain, being a material object, cannot be its own observer, comparing its past and present states

The “double intentionality” of human memory

Memories, that is to say, have an even more mysterious and counter-causal *about-ness* than perceptions of present events: they reach back to previous experiences, which themselves, through perception, reached out to that which, according to orthodox neuroscience, caused the *experience*. Memories supposedly therefore reach back to the mental causes of their physical causes. What is more, just as in vision I see the object as separate from myself, in memory I see the remembered object as different from the present, from the totality of what is here — I see it as *absent*. The memory explicitly locates its intentional object in the *past*. To borrow a phrase that Roger Scruton used in relation to music, *memories have a double intentionality*.

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The unity of the self at any given time is one thing, but the unity of the “I” over time and in memories of past CANNOT BE ACCOUNTED FOR BY NEUROSCIENCE\*\*\*\*

As if the unity of the self or subject or “I” at a *particular* time were not sufficiently resistant to neurological explanation, the unity of the self *over* time is even further beyond its reach.

Answering these objections by claiming that the “self” is just another illusion is not a satisfactory response from neuroscience (Cf. “character” “personality” “conscience” etc.)

**An Insincere Materialism** ... Very important section

You should know what Tallis means by “**thinking by transferred epithet**”

The belief among neurophilosophers that the brain, a material object, can generate *tensed* time is one among many manifestations of the insincerity of their materialism. As we have seen, under cover of hard-line materialism, they borrow consciousness from elsewhere, smuggling it into, or presupposing it in, their descriptions of brain activity. This ploy is facilitated by a mode of speaking which I call “thinking by transferred epithet,” in which mental properties are ascribed to the brain or to parts of the brain (frequently very tiny parts, even individual neurons), which are credited with “signaling,” and often very complex acts such as “rewarding,” “informing,” and so forth.

“neurotalk”

This ease is in turn concealed by the ubiquity of transferred epithets outside brain science in everyday life. We are so used to talking about machines (particularly computers) “detecting,” “signaling,” “recording,” “remembering,” “warning,” and so forth, that we hardly notice, even less object, when this talk is applied to brains.

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No neural “signals” “messages” or “information” … this is lunacy!

This trend, incidentally, is the top of a slippery slope at the bottom of which much lunacy lies. Information, once freed from the confinement of conscious human beings offering information to other human beings requiring to be informed, is everywhere. It is in the light; it is in DNA and other structures of the body. It is even in the material transactions of the non-living universe, as has been suggested by the advocates of “digital physics” — the idea that the universe is computation. By such misuse of language, matter becomes consciousness, or the energy in the material world comes to know itself, as has been suggested by the advocates of “panpsychism” — the idea that all matter is at least partially conscious.

The promotion of energy to information is the inverse of the demotion of consciousness to material transactions.

## Finding Ourselves

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We can see more clearly now the wide gap between brain function and consciousness — really, between people and their brains. This gap is seemingly crossed by linguistic legerdemain: people can be “brainified” if the brain is personified. But we have seen reasons why this gap should be unbridgeable. This, however, only throws into greater relief the magnitude of what remains to be answered, and so we must ask where we go from here. The failure to explain consciousness in terms of the brain — which follows from the failure of matter as understood in the most rigorous scientific manner to be able to house consciousness — raises two immediate questions.

The first and most obvious question is: Why, if the brain is not the basis of consciousness, is it so intimately bound up with it?

The second question is whether, having shown the difficulty — no, the impossibility — of trying to get from brains alone to persons, we should abandon the very notion of the brain as a starting point for our thoughts about human consciousness.