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- Jung, C. (1967–77). The role of the unconscious [‘Über das Unbewußte’, 1918]. In C. G. Jung (Ed.), *Collected works* (revised ed., Vol. 10, p. 12). London: Routledge.
- McGilchrist, I. (2009). *The master and his emissary: The divided brain and the making of the Western world*. New Haven: Yale University Press.
- McGilchrist, I. (2019). Cerebral lateralization and religion: A phenomenological approach. *Religion, Brain & Behavior*, 9, 319–339. doi:10.1080/2153599X.2019.1604411.
- Moser, P. (2008). *The elusive god: Reorienting religious epistemology*. Cambridge: Cambridge University Press.
- Nagel, T. (1979). What is it like to be a bat? [1974] In *Mortal questions* (pp. 165–180). Cambridge: Cambridge University Press.
- Nietzsche, F. (1878/1996). *Human, all too human*. (R. J. Hollingdale, Trans.). Cambridge: Cambridge University Press.
- Pascal, B. (1962). *Pensées* [1670], L. Lafuma (Ed.). Paris: Seuil.
- Putnam, H. (1985). Reference and truth. In *Realism and reason: Philosophical papers*, (Vol. 3, pp. 65–86). Cambridge: Cambridge University Press.
- Steiner, G. (1992). *Heidegger* (2nd ed.). London: Fontana.
- Stump, E. (2010). *Wandering in darkness*. Oxford: Oxford University Press.
- Thompson, E. (2007). *Mind in life*. Cambridge: Mass: Harvard University Press.
- Ward, G. (2014). *Unbelievable: Why we believe and why we don't*. London: Tauris.



## McGilchrist's hemispheric homunculi

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In the target article, Iain McGilchrist draws upon his work, *The Master and his Emissary: The Divided Brain and the Making of the Western World* (=ME), to develop the relevance of its central claims to religion. Here and elsewhere McGilchrist contends, contrary to some critics, that his construal of the *divided brain hypothesis* (=DBH) does not make the fundamental philosophical error known as the *homunculus fallacy*. The critics' charge is this: McGilchrist's DBH purports to explain certain psychological features of human persons by providing an explanation that is in fact a pseudo-explanation. It is a pseudo-explanation because the DBH's explanation of these psychological phenomena merely reintroduces the same psychological phenomena as explanatory factors that belong to the two different hemispheres of the brain. This article addresses whether McGilchrist's position is in fact innocent of the charge of the homunculus fallacy. It is one thing to recognize the principle of contradiction and aim to avoid contradictions; it is another thing to avoid actually contradicting oneself. I show that McGilchrist consistently violates the homunculus fallacy despite his consistent claims to the contrary. I then argue that it is impossible for McGilchrist to articulate the central thesis of ME, namely, DBH, without violating the homunculus fallacy. Indeed, McGilchrist's DBH requires that the error identified by the homunculus fallacy is not a fallacy at all, but is a deep insight crucial to understanding the making of the western world. Let us begin with the homunculus fallacy.

### I.

The Latin word *homunculus* is a diminutive of *homo*; it means *little human*. Sir Anthony Kenny introduced “the homunculus fallacy” in 1971.<sup>1</sup> This fallacy violates Wittgenstein's dictum: “Only

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of a human being and what resembles (behaves like) a living human being can one say: it has sensations; it sees; is blind; hears; is deaf; is conscious or unconscious.”<sup>2</sup> Kenny writes:

This dictum is often rejected in practice by psychologists, physiologists and computer experts, when they take predicates whose normal application is to complete human beings or complete animals and apply them to parts of animals, such as brains, or to electrical systems. This is commonly defended as a harmless pedagogical device; I wish to argue that it is a dangerous practice which may lead to conceptual and methodological confusion. I shall call the reckless application of human-being predicates to insufficiently human-like objects the ‘homunculus fallacy’, since its most naive form is tantamount to the postulation of a little man within a man to explain human experience and behaviour.<sup>3</sup>

Notice that Kenny identifies for us two slightly different, though often interconnected, kinds of mistakes. The first error is more aptly called the “mereological fallacy”—mereology is the study of parts and wholes. The mereological fallacy in neuroscience has been investigated systematically by Peter Hacker and Maxwell Bennett in their two magisterial studies, *Philosophical Foundations of Neuroscience* and *History of Cognitive Neuroscience*.<sup>4</sup> The mereological fallacy concerns the mistake of ascribing attributes and predicates to *parts* that can only be attributed to a *whole*.

The mereological fallacy identifies an important mistake, but it is a different mistake from the one that is aptly called the “homunculus fallacy.” This is the error of claiming to explain some phenomenon but failing to appreciate that one’s explanation merely re-introduces the same phenomenon that originally required an explanation. It is difficult to tease these two errors apart because they are frequently committed together. Nevertheless, it is one thing to ascribe an attribute to a part that only truly pertains to the whole, and it is another thing to purport to explain some *explanandum* by re-introducing the same *explanandum*—albeit, perhaps, a semi-, demi-, proto-, or quasi-version of it—as though it provided an illuminating *explanans* for the original *explanandum*. The latter error is what I mean by the homunculus fallacy.

Kenny’s caricature of the homunculus fallacy goes like this: What explains the psychological abilities of human beings? Well, inside of the human being there is a little human being with extraordinary psychological abilities and this *explains* the psychological abilities of human beings. The actual violations of this fallacy in philosophy, psychology, and neuroscience are not formally different from this cartoonish example. Many, but by no means all, contemporary explanations of the ability of humans to imitate and empathize appeal to the imitative and empathetic abilities of mirror neurons. Without any additional qualifications, this kind of pseudo-explanation—an instance of the homunculus fallacy—does little more than put us right back where we started. This is because we now need to explain what is it about mirror neurons that endows them with the ability to imitate or empathize.<sup>5</sup> Kenny draws attention to the same problem with the purported explanations of perception by Descartes and more recent vision scientists.

What is wrong is that exactly the same sorts of problems arise about Descartes’ explanation as about his *explanandum*. One danger, then, of the homunculus fallacy is that in problems concerning perception and kindred matters [e.g., imitation, empathy, sympathy, belief, desire, intention] it conceals what is left to be explained. (Kenny, 1971, p. 127)

Notice once again that this mistake is different from that identified by the mereological fallacy. Hacker and Bennett would, not doubt, contend that these examples of the homunculus fallacy provide perfect illustrations of a violation of the mereological fallacy as well. The mereological fallacy teaches us that there can be no explanation for why mirror neurons imitate, because it is nonsense to attribute the ability to imitate to mirror neurons. It is only whole human beings that imitate; parts of human beings do not of themselves imitate. I think both errors are problematic, but for various contentious philosophical reasons the mereological fallacy is not universally endorsed as a mistake, whereas very few philosophers and scientists would maintain that the homunculus fallacy does not identify a genuine error.

Consider how explanations in the special sciences work according to the *new mechanistic philosophy* of biology, neuroscience, psychology, and cognitive science. The new mechanistic philosophy (=NMP) has arguably become the dominant approach in the philosophy of the special sciences. NMP claims that:

In many fields of science what is taken to be a satisfactory explanation requires providing a description of a mechanism. So it is not surprising that much of the practice of science can be understood in terms of the discovery and description of mechanisms. (Machamer, Darden, & Craver, 2000, p. 1)

For *NMP*, the mechanisms discovered by science consist of four elements: phenomenon, component entities, component activities, and organization.

Mechanisms are entities and activities organized such that they exhibit the *explanandum phenomenon*. (Craver, 2007, p. 6)

A mechanism is a structure performing a function in virtue of its component parts, component operations, and their organization. The orchestrated functioning of the mechanism is responsible for one or more phenomena. (Bechtel & Abrahamsen, 2005, pp. 421–441)

It is important to point out that exponents of *NMP* have a different understanding of mechanisms from the mechanists of old (Cf. Bechtel & Richardson, 2010; Craver & Darden, 2013). Significant for our purposes is the antireductionism that *NMP* shares with McGilchrist. According to *NMP*, even though a mechanistic phenomenon is constituted from the organization of its component entities and activities, the mechanism as a whole is not only more than the sum of its parts, the whole is able to do things none of its parts can do. “The behavior of the whole is dependent on the behavior of the components in such a way that interventions to change the components can change the behavior of the whole and vice versa” (Craver, 2007, p. 183). Mechanisms “can produce behaviors that their parts alone cannot produce. *There are generalizations about causal relevance that are true of mechanisms and false of their parts*” (Craver, 2007, p. 227, emphasis added).

I have presented an extraordinarily simplistic digest of *NMP*, but it should be enough to clarify why *NMP*’s antireductionist approach to biological and psychological mechanisms abjures the explanatory errors highlighted by the homunculus fallacy. William Bechtel, an exponent of *NMP*, provides a canonical statement of why explanations in the special sciences must not be led into temptation by the errors identified by the homunculus fallacy, but must vigilantly avoid or critically deliver themselves from such errors.

Typically ... the operations within a mechanism are different from the phenomenon produced by the mechanism. Within a neuron, for example, neurotransmitters perform such operations as diffusing across a synapse and binding to a receptor; but the neuron itself generates action potentials. The point of organizing component parts and operations into a mechanism is to accomplish something that cannot be performed by the individual components. Hence, *assuming a homunculus with the same capacities as the agent in which it is posited to reside clearly produces no explanatory gain*. The recognition that it is problematic to assume that operations within a mechanism perform the same type of operations as the mechanism itself may be a major reason many find problematic Fodor’s ... proposal of a language of thought to explain language and thought. (Bechtel, 2009, p. 561, emphasis added)

The homunculus fallacy identifies a critical error with any alleged *explanans* for some *explanandum* that in fact merely reproduces the original *explanandum* without explaining anything. If the aim of an explanation is to illuminate and provide knowledge of what is to be explained, what the homunculus fallacy helps us to identify are pseudo-explanations that fail to explain. Surprisingly, many theorists are quick to state their allegiance to avoiding the error identified by the homunculus fallacy, only later to declare that their actual violations of this error are not problematic but the mere deployment of a “harmless pedagogical device” (Kenny, 1971, p. 125). Kenny draws our attention to the way vision theorists, like Descartes and R. L. Gregory, caution their readers against falling victim to the error identified by the homunculus fallacy, but then fail to appreciate that they themselves go on to commit this very error or declare it to be a harmless error of no consequence. There is a clear pattern here, and McGilchrist repeats the same pattern. So far I have stated what the homunculus fallacy is, identified a dialectical pattern of disowning and committing the same error, and I have claimed McGilchrist follows this pattern. Demonstrating this is the task of the next section.

## II.

Does McGilchrist lapse into the error of the homunculus fallacy? To address this question, we need to recall McGilchrist's central thesis in the target article. McGilchrist starts with the view he rejects, namely, that neuroscientific investigations only touch on the ways activities in the brain correlate with human experience, "but do not directly illuminate the nature of that experience." Some philosophers, he notes, even hold that neuroscience cannot say anything about experience "that we could not have discovered by introspection, since by definition the 'inwardness' of mental life has to be the authority on experience."<sup>6</sup> Contrary to this view McGilchrist contends that:

knowledge about reliable differences between the cerebral hemispheres can tell us something of considerable importance about our mental world which would not easily be discoverable by introspection, since, for reasons of survival, nature has taken care to hide it from us. Awareness of it would bring life to a standstill. (McGilchrist, 2019)

What do these reliable differences between the cerebral hemispheres tell us about our mental world? Darwinian evolution has bequeathed two "diametrically opposed types of attention to the world" that, for example, enable animals to feed and keep alert for predators at the same time. One mode of attention is "narrow-beam, sharply focused, fragmentary, already committed to its object; the other, broad, open, sustained, vigilant and uncommitted as to what it might find." (McGilchrist, 2019). What sustains these two diametrically opposed modes of attention is the divided brain, that is, two functionally independent hemispheres that are sufficiently connected to function together.

Let me first draw attention to a serious empirical problem with McGilchrist's thesis which I cannot address here. McGilchrist's *DBH* depends on a certain construal of evidence from neuropsychology and cognitive neuroscience that has been confuted and superseded by significantly more complex and nuanced empirical models of the asymmetries and profound physiological and functional interconnections between the two hemispheres of mammalian brains.<sup>7</sup> These empirical models leave McGilchrist's *DBH* untenable. This article, however, focuses on fundamental conceptual and philosophical problems with McGilchrist's thesis. My claim is this: Even if we grant that McGilchrist's *DBH* is an abductively supported and live scientific hypothesis, his thesis that it can shed some explanatory light on human behavior and the making of the western world is not innocent of the homunculus fallacy.

Let us return to McGilchrist's evolutionary tale of two kinds of attention enabled by the two hemispheres of the brain.

Since the nature of attention, the way in which we attend, governs the nature of the world that comes to attention, and since *each hemisphere on its own is capable of yielding a coherent experiential world*, two radically different types of attention should lead to two radically different experiential worlds, with different qualities, goals and values. Evidence from a wealth of sources, including brain insults (traumatic injury, stroke, tumour, etc.), neuropsychological experiments in normal and post-commissurotomy subjects, and brain imaging in a range of modalities suggests that this is indeed the case. (McGilchrist 2019; emphasis added)

McGilchrist seems to contend that two radically different experiential worlds are somehow explained by purported scientific evidence that "*each hemisphere on its own is capable of yielding a coherent experiential world*." This contention does violate the homunculus fallacy if what *explains* the *explanandum* (i.e., the two different experiential worlds) are the different coherent experiential worlds *yielded* by the two hemispheres. Why? Because not only does this explanation reintroduce the same *explanandum*, but this "explanation" also leaves us with the question: What explains this "new" *explanandum*, namely, that the two brain hemispheres can *yield* their very own coherent experiential worlds? The mystery of there being two different experiential worlds only becomes more mysterious by contending this mystery is explained by a brain with two hemispheres each with its own experiential world. How do the hemispheres *yield* their very own coherent experiential worlds? To explain this magical *yielding* would solve the mind-body problem.

Anticipating these worries, McGilchrist appears to acknowledge and disown the errors of the homunculus and mereological fallacies. He writes:

I should say, at this point, that I am aware that a hemisphere on its own cannot be said to do what only a person can do: ‘believe’, ‘intend’, ‘decide’, ‘like’ and so on. These and similar formulations should be understood as avoiding the repetition of such cumbersome locutions as ‘a subject relying on the cognitive faculties of the left [or right] hemisphere believes’, etc.

Elsewhere McGilchrist has provided a more detailed response to the charge that his project violates the aforementioned mereological fallacy. It is worth quoting McGilchrist’s response at length.

I am the last person to believe that wholes can be reduced to their parts – ... one of the persistent themes of my book [ME] is precisely that this [i.e., the mereological fallacy] is a fallacy. People like Bennett and Hacker are obviously right, in a literalistic sense, that the left hemisphere doesn’t ‘believe’, ‘intend’, ‘decide’, ‘like’ or anything else of the kind, since these are all predicates of the mind of a person, not the brain – of course I agree. But I think the point is relatively trivial, and easily resolved, in relation to the hemispheres. For example, when I say that ‘the left hemisphere likes things that are man-made’, this could be paraphrased as ‘a human being relying on his left hemisphere alone likes things that are man-made’. All that happens is that every time you say ‘the left hemisphere’ you substitute it with ‘a human-being-reliant-solely-on-his-left-hemisphere’. But this is tedious. Everyone understands the point, which is why all neuroscientists invariably commit this fallacy (and, yes, it is a fallacy, I agree) to some degree. But we enter the realms of unsatisfying pedantry here, in my view. I don’t think there is a devastating philosophical issue here waiting to explode in my face. I had either to talk about the hemispheres as machines, as scientists usually do, which is also to commit a fallacy, or as having concerns, interests and values, which suggests they are at least part of a person. I prefer the latter, and am unrepentant.<sup>9</sup>

McGilchrist’s diverse claims here yield an incoherent position. He rejects reductionism,<sup>10</sup> grants to Bennett and Hacker that the mereological fallacy is a mistake, yet thinks it is pedantry to avoid fallacies and more satisfying to permit such errors since all neuroscientists do it and everyone understands the point. Bennett and Hacker, of course, dedicated two books to illustrating that everyone does not understand the point, explicating why this error is far from harmless, and demonstrating that there *is* a “devastating philosophical issue here” for those who carelessly make this mistake. Additionally, McGilchrist’s dichotomy between the supposed exigencies of either talking about the hemispheres as machines or ascribing to them “concerns, interests, and values” is problematic. This dichotomy is neither exhaustive (why not employ the language of neuroscience and *NMP* to talk about the brain?), nor does his unrepentant preference for the second route evade the mistakes he confesses are bound up with the errors identified by the mereological fallacy.

Strikingly, McGilchrist’s justifications for violating the mereological fallacy are quite similar to those given by Daniel Dennett in his response to Bennett’s and Hacker’s critique of his intentional stance.<sup>11</sup> The strategy of the intentional stance:

consists of treating the object whose behavior you want to predict as a rational agent with beliefs and desires and other mental stages exhibiting what Brentano and others call *intentionality*. (Dennett, 1989, p. 15)

The difference between McGilchrist and Dennett is that Dennett rejects the contention that the mereological fallacy is a fallacy. For Dennett, the forms of psychological attribution identified as erroneous by Bennett’s and Hacker’s mereological fallacy and Kenny’s homunculus fallacy, are actually the explanatorily fruitful forms of psychological attribution that are licensed by the intentional stance. Dennett contends:

Far from it being a mistake to attribute hemi-semi-demi-proto-quasi-pseudo intentionality to the mereological parts of persons, it is precisely the enabling move [of the intentional stance] that lets us see how on earth to get whole wonderful persons out of brute mechanical parts. That is a devilishly hard thing to imagine, and the poetic license granted by the intentional stance eases the task substantially. From my vantage point, then, Hacker is comically naive, for all the world like an old-fashioned grammarian scolding people for saying “ain’t” and insisting *you can’t say that!* to people who manifestly can say that and know what they mean when they do. (Dennett, 2007, pp. 88–89)

Despite his professed endorsement of the mereological fallacy of Bennett and Hacker, McGilchrist’s actual position has more in common with the intentional stance of Dennett. Indeed, without something like the intentional stance, there is no way to save McGilchrist’s thesis from the mereological



fallacy. But to endorse the intentional stance is to reject that the mereological fallacy is a fallacy. The best way for McGilchrist to redeem his position is to align himself with Dennett's intentional stance. The intentional stance also provides a way around the homunculus fallacy insofar as one is willing to endorse Dennett's ambiguously instrumentalist pragmatism about explanation—a view that goes against the grain of realist accounts of explanation, like *NMP*.<sup>12</sup> Here is one illustration of Dennett's contentious position:

One may be tempted to ask: Are the subpersonal components real intentional systems? At what point in the diminution of prowess as we descend to simple neurons does real intentionality disappear? Don't ask. The reasons for regarding an individual neuron (or a thermostat) as an intentional system are unimpressive, but not zero, and the security of our intentional attributions at the highest levels does not depend on our identifying a lowest level of real intentionality.<sup>13</sup>

It is not clear whether McGilchrist would accept this olive branch from Dennett. Similarly, Dennett would no doubt reject McGilchrist's divided brain hypothesis as *recherché* neuroscience. But like Dennett, McGilchrist favors poetic license and metaphors, that is, good ole *right hemisphere* (=RH) forms of attention over the pedantry of the *left hemisphere* (=LH) language policing exhibited by Kenny, Bennett, and Hacker. But McGilchrist would demur Dennett's instrumentalist pragmatist naturalism, which might be explained by an inordinate LH—another instance of the emissary taking himself to be the master. How can these three rival positions arise in the first place? Why are these three positions at odds with each other? McGilchrist's DBH proposes a way to answer this question. Using McGilchrist's idiom, we need to ask: What kind of RH and LH cocktail produces a Dennett? How is it that Kenny, Hacker, and Bennett, can commence with such well-grounded holistic RH thinking, only to end up in fastidious LH analysis? Where does McGilchrist fit in the mix of RH to LH proportions? Even if we could answer these questions, they would not resolve for us which of these three perspectives is correct or closer to the truth. All three perspectives frame and interpret the detailed bits from the LH according to three rival RH holistic views of the world. So, unless we are willing to endorse a radical version of hemispherically naturalized epistemology, which McGilchrist quite rightly seems to repudiate, the DBH does not shed any light on how to evaluate the truth of these rival views. Perhaps we cannot expect it to do so, but McGilchrist often employs it to suggest which views are closer to the truth. In the next section I argue that McGilchrist's construal of the divided brain hypothesis is not explanatory because it runs afoul of the errors of the homunculus fallacy.

### III.

McGilchrist contends that his impenitent transgressions of the mereological fallacy (and homunculus fallacy) are harmless, and any tensions can be resolved by following a simple rule:

when I say that 'the left hemisphere likes things that are man-made', this could be paraphrased as 'a human being relying on his left hemisphere alone likes things that are man-made'. All that happens is that every time you say 'the left hemisphere' you substitute it with 'a human-being-reliant-solely-on-his-left-hemisphere'. (McGilchrist, 2019)

Let us put McGilchrist's substitution rule to the test by rendering his elliptical statements into more perspicuous ones. To pass the test, the perspicuous reformulations of McGilchrist's elliptical formulations cannot violate the homunculus fallacy.

Recall McGilchrist's claims about the two experiential worlds yielded by the two hemispheres of our brain. McGilchrist fills out the characteristics of these two radically opposed experiential worlds by summarizing seventeen headline contrasts, which are explored in much greater detail in *ME*. According to McGilchrist, the LH and RH yield the following two radically different competencies, perspectives, and experiences vis-a-vis things in the world:

	Left hemisphere	Right hemisphere
1	manipulating the environment	understanding the environment
2	familiar stimuli	novel stimuli
3	certainty	possibility
4	isolated, discrete, fragmentary	interconnected wholes
5	fixity and stasis	change and flow
6	mechanically assembled from pieces	complex wholes
7	machines, tools; selective for inanimate	selective for animate
8	explicit, decontextualized	implicit, contextually embedded
9	literal; fails to comprehend metaphor	
10	reorders episodes by type	understands narrative
11	categorizes based on particular features	unique examples and family resemblance
12		contains body image, better limbic connections
13	analytically superior, more complex syntax	superior linguistic pragmatics
14	tends to utilitarianism	tends to deontology; essential for theory of mind
15		superior emotional receptivity and expressivity; sense of beauty depends more on RH
16	hemisphere of theory	hemisphere of experience
17	unreasonably optimistic	realistic, tends to the pessimistic

After summarizing the suites of competencies of the two hemispheres that yield the two different experiential worlds, McGilchrist contends:

Clearly under normal circumstances we are not aware that the world we experience is a synthesis of these two phenomenological versions or ‘takes’. However it is not just under artificial, experimental conditions, or in illness or injury, that their existence becomes apparent. Every attempt to reflect on life, understand the world or convey its true nature in language – in other words, every project of philosophy or theology – is an attempt to reconcile fundamentally incompatible models of the world, each of which can claim to reveal aspects of underlying reality. These attempts can, I suggest, be illuminated by an awareness of the conflicting models of the world yielded by the two hemispheres of our brains. (McGilchrist, 2019)

Does McGilchrist’s substitution rule save such contentions from the homunculus fallacy? First, we should try to get clear about what McGilchrist means by phenomenology and experiences of the world. Typically, phenomenology is used interchangeably with experiencing appearances. A phenomenology of the world is an account of the way we experience the world and its appearances. This rough account of phenomenology is shared by most continental and analytic philosophers. At times McGilchrist seems to be employing attention, phenomenology, and experiences of the world in this interchangeable way.<sup>14</sup> In this quote, two phenomenological versions or “takes” on the world are contrasted with the world we experience and are aware of, which he claims is a synthesis of these two phenomenological takes on the world. What a “phenomenological take” means here is enigmatic. What is the subject of these two phenomenological takes on the world? It is not *me*, at least not ordinarily, because McGilchrist contends that our normal experience of the world is a synthesis of these two phenomenological takes on the world. But he also claims these two phenomenological takes are pervasive to all of our reflections on life and the nature of the world. Earlier McGilchrist stated that “each hemisphere on its own is capable of yielding a coherent experiential world,” which I take it is equivalent to his claim here that there are two phenomenological takes on the world. But the subject(s) of these two experiences of the world, these two phenomenological takes, cannot be the *RH* or *LH*, because McGilchrist already told us he rejects reductionism and thinks it is only the whole person that has psychological attributes, like having experiences or phenomenological takes on the world. The same confusions are found throughout the target article, but they are especially pronounced in its conclusion:

In *The Master and his Emissary*, analysis of a vast neurological literature over many decades concerning hemisphere differences in birds, animals and humans led to the conclusion that the differences were not in what ‘functions’ the two hemispheres carried out, since both were clearly involved in every brain process, but in the manner in which they each engaged with the world, especially as mediated by clear and reliable differences



in the kind of attention they paid to it. Since attention is intrinsic to the nature of the phenomenological world, and since the nature of attention paid changes the kind of world that comes to attention, it would be expected that each hemisphere would bring into being its own version of the world, with its own goals, concerns and values. This means that each hemisphere should have a quite distinct ‘take’ on every aspect of human experience and behaviour. (McGilchrist, 2019)

Not only do the two hemispheres have radically different phenomenological takes on the world, they also somehow possess their “own goals, concerns and values” and have “quite distinct ‘take[s]’ on every aspect of human experience and behaviour.” These are extraordinary attributions! McGilchrist’s thesis seem to be that my experiences, goals, concerns, and values, are the results of a complex, tumultuous—and sometimes near inter-hemispheric—synthesis of the distinct forms of attention, experiential worlds, goals, concerns, and values of my two hemispheres. Of course, he denies that the hemispheres literally have such psychological attributes, but can he do so without forfeiting his divided brain hypothesis? There is a problematic tension here, but McGilchrist proposes a solution: his substitution rule. Let us see if his substitution rule resolves the tension he claims it does.

McGilchrist’s substitution rule states that his attribution of two phenomenological takes on the world to the two hemispheres was merely elliptical for stating that the human being or “a subject relying on the cognitive faculties of the left hemisphere” has one kind of phenomenological take on the world and a human being or “a subject relying on the cognitive faculties of the right hemisphere” has another phenomenological take on the world. Does this solve the problem?

No, it makes matters worse. This is because now one and the same human being has three conflicting experiences of the world at once, however, the human does not experience two of their experiences or phenomenological takes on the world. Said otherwise, according to McGilchrist, our normal experience of the world is actually a synthesis of two radically different coherent experiential worlds that no one experiences. Positing an experience without an experiencer is nonsense. McGilchrist’s substitution rule does not free his view from the homunculus fallacy. Rather, deploying his substitution rule reveals that the homunculus fallacy does not go away and that McGilchrist’s view entails an absurdity. The absurdity is found in the implication that normal human experiences of the world are a synthesis of two experiences that no one experiences. The homunculus fallacy is found in the purported claim that ordinary experience of the world is *explained* by two conflicting *experiential worlds* that no human and no brain hemispheres in fact experience. This account stacks obscurity upon obscurity. Not only is his attribution of three distinct phenomenological worlds to one and the same human at one and the same time bewildering, the implications of this strange view leave us with even more bizarre questions. How are the two nonexperienced phenomenologies yielded by the two hemispheres synthesized into the phenomenology we do experience? What is the selectivity filter or censor of this synthesis of *LH* and *RH* worlds? McGilchrist’s impossible commitments seem to entail there can be no answers to these questions. McGilchrist denies that the hemispheres can really be subjects of experience in the strict sense, because he maintains that only the complete human person can be a subject of a phenomenological take on the world. And this entails there can be no real subject for either of these two radically different phenomenological takes on the world. But if there can be no real subject for them—no person, brain, or hemisphere that in fact bears them, or experiences them, or constructs them—then they are in fact merely metaphorical experiences of the world. And if this is so, then positing these two phenomenological takes on the world, which the two hemispheres only metaphorically yield, does not in fact provide us the kind of scientific *cum* philosophical explanation McGilchrist’s thesis requires and promises to deliver.<sup>15</sup> If this line of criticism is correct, then the substitution rule fails to save the divided brain hypothesis from the homunculus fallacy.

#### IV.

If McGilchrist still wishes to save the divided brain hypothesis,<sup>16</sup> then McGilchrist should, contrary to what he has said elsewhere, reject the claim that the homunculus and mereological fallacies are

genuine fallacies. McGilchrist's thesis needs something like the intentional stance, that is, he needs a conceptual tool that purportedly *justifies* applying psychological and intentional concepts to the sub-personal level of the two hemispheres of the brain. He needs to be able to say that the two hemispheres, either genuinely or metaphorically, have all of the intentional and psychological attributes—attention, experiential worlds, phenomenologies, goals, concerns, values—he ascribes to them. Of course, this move requires taking on board many of Dennett's most tendentious views about explanation, including his idiosyncratic contention that proto-versions of an *explanandum* provide a genuine *explanans* of the original *explanandum*—proto-versions that eventually bottom out in a categorically different kind of *explanans*.<sup>17</sup> An argumentative strategy that clearly violates the fallacy of equivocation.<sup>18</sup>

In short, the philosophical costs required to save the divided brain hypothesis are enormously implausible. But that is not all, in order for McGilchrist to endorse Dennett's version of the intentional stance, he will also need to give up some of his claims about the two hemispheres yielding their own coherent experiential worlds. This is because even Dennett acknowledges that the homunculus fallacy identifies one problematic error. "The homunculus *fallacy*, by attributing the *whole* mind to a proper part of the system, merely postpones analysis and thus would generate an infinite regress since each postulation would make no progress" (Dennett, 2007, p. 88). Dennett's more modest account of the homunculus fallacy differs from Kenny's and Bechtel's. For Dennett, the error is trying to explain the *whole* competency of some *explanandum* by re-introducing the entire *explanandum* in the parts that are supposed to do the explaining of the original whole. "Homunculi are *bogeymen* only if they duplicate *entire* the talents they are rung in to explain" (Dennett, 1978, p. 123). Dennett's intentional stance avoids his version of the homunculus fallacy by merely attributing proto-thoughts or semi-perceptions to the proper parts of some complete intentional system, like a human being.<sup>19</sup> If McGilchrist insists on maintaining that, strictly speaking, there are two *complete* coherent experiential worlds yielded by the two hemispheres that synthesize into the human's complete experience of the world, then even his revised thesis violates Dennett's modest version of the homunculus fallacy. Perhaps McGilchrist will be open to conceding that his talk of two coherent experiential worlds and the suggestion that they are complete is just a misleading metaphor; hemispheres in fact only "sort of" have or possess proto-experiential worlds. This revised version of McGilchrist's divided brain hypothesis would then contend that the intentional stance provides him with the poetic license needed to ascribe these radically different proto-experiential worlds to the two hemispheres. Such ascriptions will either be *real enough*, à la Dennett, or just more metaphors. And according to McGilchrist's final words in *ME*: "if it turns out to be 'just' a metaphor, I will be content. I have a high regard for metaphor. It is how we come to understand the world."<sup>20</sup> True enough, but I contend that McGilchrist's final consolation and Dennett's intentional stance, like the error identified by the homunculus fallacy, evade explanations and leave us with misunderstandings. I remain content with the explanations and understandings provided by Bennett and Hacker.

We note first that *poetic license* is something granted to poets for purposes of poetry, not for purposes of empirical precision and explanatory power. Second, ascribing cognitive powers to parts of the brain provides only the semblance of an explanation where an explanation is still wanting. So it actually blocks scientific progress. Sperry and Gazzaniga claim that, in cases of commissurotomy, the bizarre behavior of subjects under experimental conditions of exposure to pictured objects is explained by the fact that one hemisphere of the brain is ignorant of what the other half can see. The hemispheres of the brain allegedly know things and can explain things, and, because of the severance of the corpus callosum, the right hemisphere allegedly cannot communicate to the left hemisphere what it sees. So the left hemisphere must generate its own interpretation of why the left hand is doing what it is doing. Far from explaining the phenomena, this masks the absence of any substantial explanation by redescribing them in misleading terms. The dissociation of functions normally associated is indeed partially explained by the severing of the corpus callosum and by the localization of function in the two hemispheres. That is now well known, but currently available explanation goes no further. It is an illusion to suppose that anything whatsoever is added by ascribing knowledge, perception, and linguistic understanding ("sort of" or otherwise) to the hemispheres of the brain.<sup>21</sup>

The discoveries achieved by neuroscience and kindred disciplines are extraordinary; they expand our understanding of the natural world and provide resources to treat some of the most frightening pathologies. No less important are the perspicuous interpretations of the making of the Western world that help us make sense of who we are, what mistakes we have made, and provide prescient warnings about potentially dangerous trajectories we should strive to avoid. McGilchrist argues the divided brain hypothesis sheds light on the way neuroscience can provide resources for explaining the intellectual history of the west. In this essay I have shown that McGilchrist's construal of the divided brain hypothesis unavoidably runs into the problems identified by the homunculus fallacy. I also demonstrated that his substitution rule fails to save his divided brain hypothesis from the homunculus fallacy. If this line of criticism is correct, then McGilchrist's divided brain hypothesis turns out to provide no more than a pseudo-explanation of the myriad oscillating attitudes, world-views, and endeavors of humans in the west. McGilchrist might hit upon illuminating descriptions of the latter phenomena, but the divided brain hypothesis fails to provide any explanation for these phenomena. We can be sympathetic to certain aspects of McGilchrist's diagnosis of the current perils we face in the west, but we should not be bedazzled by the purported explanatory power of the divided brain hypothesis. The true explanations, I contend, are to be found among the competing voices that present *genuinely human* explanations of human affairs (See MacIntyre, 2007, 2016; Taylor, 1989, 2007).

## Notes

1. Kenny (1971, pp. 65–74); reprinted in Kenny (1984, pp. 125–136). I cite the 1984 version, which includes a postscript, henceforth: HF. Cf. Anthony Kenny, "Cognitive Scientism," in *Wittgenstein and Analytic Philosophy: Essays for P. M. S. Hacker*, ed. Hans-Johann Glock and John Hyman (New York and Oxford: Oxford University Press, 2009).
2. Wittgenstein (1953) I, §281.
3. Kenny (1971, p. 125).

A fallacy, strictly speaking, is a form of argument which can lead from true premises to a false conclusion. The inappropriate use of predicates, not being a form of argument, is not strictly a fallacy, as I observed in my paper. But it leads to a form of argument ... which is fallacious in the strict sense of the word: the argument that because a certain human-being predicate attaches to a human being it attaches to his brain, or vice versa. The mere inappropriate use of human-being predicates may be called a fallacy in an extended sense, because it may suggest conclusions which are unjustified; notably the conclusion that more has been explained by a psychological theory than has in fact been explained. Kenny (1971, p. 135)

4. Bennett and Hacker (2003) (henceforth, *PFN*); Bennett and Hacker (2008); Bennett and Hacker (2007); Smit and Hacker (2013, pp. 1–21).
5. For Hacker's critique of mirror neurons, see Hacker (2017, pp. 337–385). For a cautionary criticism of the relevance of mirror neurons to phenomenology, see Zahavi (2014, pp. 153–163). For a detailed criticism of mirror neurons from a cognitive neuroscience perspective, see Hickok (2014); Fitch (2017, p. 27).
6. What McGilchrist fails to mention is the range of alternative defenses of cogent alternative formulations of the initial claim he rejects. Additionally, it is not clear which philosophers McGilchrist has in mind; many Crypto-Cartesian philosophers would endorse the view McGilchrist mentions and rejects here. I want to make clear, however, that this is not the view of Wittgensteinians, like Kenny and Hacker, who endorse the private language arguments of Wittgenstein that aim to reveal the nonsense hidden by this construal of introspection. For Hacker, introspection is not perception, but intellectual reflection. See *PFN*.
7. No one empirical study could do justice to my counterclaims to McGilchrist's position, but consider this recent review article in the *Journal of the International Neuropsychological Society*.

The idea that the two sides of the brain somehow represent opposite polarities was due more to the human propensity to categorize in binary manner, or what has been termed *dichotomania* Whitaker (1982), than to the neurological or psychological evidence. The brain is much more obviously symmetrical than asymmetrical, and the various right hemisphere specializations outlined by Sperry (1982) are not absolute. 711. (Corballis & Häberling, 2017, pp. 710–718).

Cf. Whitaker (1982, pp. 7–13). The authors even mention McGilchrist's *ME* among the popular presentations of the dual brain, and contend that, contrary to McGilchrist's claim in the target article, brain imaging has not

reinforced the divided brain hypothesis, but has provided evidence that “question[s] the notion of a simple dichotomy, and dispel[s] many of the myths about brain duality that still persist in popular culture.” *ibid.* The article concludes: “The outlook is for increased understanding of the complexity of brain asymmetries and their genetic underpinning and interrelations with psychological function and individual differences. Laterality remains key to the understanding of the human variation, but in ways far more complex and interesting than implied by simple “dual-brain” models.” It is also worth noting that within the contemporary debates about neuro-cognitive architecture the major positions are between massive modularity, modest modularity, and neural reuse. There is no mention of the divided brain hypothesis in these debates; it is no longer on the radar as a cogent hypothesis for neuro-cognitive architecture. Cf. Anderson (2010, pp. 245–313).

9. RSA Social Brain Centre, “Divided Brain, Divided World: Why the Best Part of us Struggles to be Heard,” 2013, p. 23. McGilchrist’s formulation of the mereological fallacy in the first sentence is imprecise. The mereological fallacy identifies a fundamental conceptual confusion which thereby stops short many—but not all—efforts to reduce, either epistemically or ontologically, psychological phenomena to non-psychological phenomena.
10. Cf. *ME*, p. 7 in *passim*.
11. Cf. *PFN* 427–31; Appendix. For the proceedings of the 2006 American Philosophical Association debate between Bennett, Hacker, Dennett, and Searle, see Robinson (2007). For an audio recording of the debate, see <http://info.sjc.ox.ac.uk/scr/hacker/AudioRecordings.html>
12. For Dennett’s efforts to defend his instrumentalism as a kind of realism, see Dennett (1989, 1991, pp. 27–51).
13. Dennett (1994, pp. 236–244), quoted in Dennett (2007, p. 88). John Haldane has argued that Dennett’s attempts to employ the intentional stance to build up the intentional out of the non-intentional via gradual steps of proto-intentional bits is guilty of the fallacy of equivocation, see Haldane (1988, pp. 113–39); Haldane and Smart (1996, p. 104).
14. In the conclusion of the target article he states, “attention is intrinsic to the nature of the phenomenological world ...”
15. In *ME*, McGilchrist sometimes turns to the unconscious, and we can anticipate this kind of move here wherein it is the unconscious or rather two unconsciouses that have two radically different yet coherent experiential worlds. But this move just introduces additionally obscure *homunculi* into the mix that require additional explanations. To be clear, I am not disputing the explanatory value of the unconscious, but we also cannot uncritically wave a wand in its general direction and presume the unconscious can do the explanatory job we need. For cautious appraisals of the explanatory value of the unconscious, see MacIntyre (2004); Doran (1994).
16. Cf. McGilchrist, *ME*, 461–462.
17. For a perspicacious critical investigation of the quite different homunculus strategies of Dennett, Freud, Chomsky, and Fodor, and which on non-Wittgensteinian grounds confutes Dennett’s homunculus strategy, see Margolis (1980, pp. 244–259).
18. Again, see *supra* n. 13, for references to Haldane’s argument that Dennett’s argument violates the fallacy of equivocation.
19. N.B. Dennett’s intentional stance still violates Kenny’s version of the homunculus fallacy, the whole point of which is to claim that a proto-version of some phenomenon, a *homunculus* of a *homo*, does not by itself get us any closer to an explanation; it is a pseudo-explanation via diminutives, where we wanted an *explanans*.
20. McGilchrist, *ME*, 462.
21. Bennett and Hacker (2007, pp. 160–161). For a more detailed critical investigation of Sperry’s and Gazzaniga’s interpretations of commissurotomy patients, see Bennett and Hacker (2008, 1.3, pp. 11–15).

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## References

- Anderson, M. (2010). Neural reuse: A fundamental organizational principle of the brain. *Behavioral and Brain Sciences*, 33, 245–266.
- Bechtel, W. (2009). Constructing a philosophy of science of cognitive science. *Topics in Cognitive Science*, 1, 548–569.
- Bechtel, W., & Abrahamsen, A. (2005). Explanation: A mechanist alternative. *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences*, 36(2), 421–441.
- Bechtel, W., & Richardson, R. (2010). *Discovering complexity: Decomposition and localization as strategies in scientific research*. London: MIT Press.
- Bennett, M., & Hacker, P. (2007). The conceptual presuppositions of cognitive neuroscience: A reply to critics. In Bennett, et al. (Ed.), *Neuroscience and philosophy: Brain, mind, and language* (pp. 127–162). New York: Columbia University Press.
- Bennett, M., & Hacker, P. M. S. (2003). *Philosophical foundations of neuroscience*. Oxford: Blackwell.
- Bennett, M., & Hacker, P. M. S. (2008). *History of cognitive neuroscience*. Oxford: Blackwell.
- Corballis, M. C., & Häberling, I. S. (2017). The many sides of hemispheric asymmetry: A selective review and outlook. *Journal of the International Neuropsychological Society* 23, 710–718.
- Craver, C. (2007). *Explaining the brain: Mechanisms and the mosaic unity of neuroscience*. Oxford: Oxford University Press.
- Craver, C., & Darden, L. (2013). *In search of mechanisms: Discoveries across the life sciences*. Chicago: University of Chicago Press.
- Dennett, D. (1978). *Brainstorms: Philosophical essays on mind and psychology*. Cambridge: Bradford Books.
- Dennett, D. (1989). *The intentional stance*. Cambridge: MIT Press.
- Dennett, D. (1991). Real patterns. *Journal of Philosophy*, 88(1), 27–51.
- Dennett, D. (1994). Daniel C. Dennett. Self-Portrait. In S. Guttenplan (Ed.), *A Companion to the philosophy of mind* (pp. 236–244). Oxford: Blackwell Press.
- Dennett, D. (2007). Philosophy as naïve anthropology. In *Neuroscience and philosophy: Brain, mind, and language* (pp. 88–89). New York: Columbia University Press.
- Doran, R. (1994). *Subject and psyche*. Milwaukee: Marquette University Press.
- Fitch, W. T. (2017). A major blow to primate neonatal imitation and mirror neuron theory. *Behavioral and Brain Sciences*, 40(e390), 27.
- Hacker, P. M. S. (2017). *The passions: A study of human nature*. Oxford: Wiley Blackwell.
- Haldane, J. (1988). Psychoanalysis, cognitive psychology and Self-Consciousness. In P. Clark, & C. Wright (Eds.), *Mind, psychoanalysis and science* (pp. 113–139). Oxford: Blackwell.
- Haldane, J., & Smart, J. J. C. (1996). *Atheism and theism*. London: Blackwell.
- Hickok, G. (2014). *The myth of mirror neurons: The real neuroscience of communication and cognition*. London: Norton.
- Kenny, A. (1971). The homunculus fallacy. In M. Green (Ed.), *Interpretations of life and mind* (pp. 65–74). New York: Humanities Press.
- Kenny, A. (1984). *The legacy of Wittgenstein*. Oxford: Blackwell.
- Kenny, A. (2009). Cognitive scientism. In H.-J. Glock, & J. Hyman (Eds.), *Wittgenstein and analytic philosophy: Essays for P. M. S. Hacker* (pp. 250–262). New York and Oxford: Oxford University Press.
- Machamer, P., Darden, L., & Craver, C. (2000). Thinking about mechanisms. *Philosophy of Science*, 67(1), 1–25.
- MacIntyre, A. (2004). *The unconscious* (revised ed.). London: Routledge.
- MacIntyre, A. (2007). *After virtue* (3rd ed.). Notre Dame: Notre Dame University Press.
- MacIntyre, A. (2016). *Ethics in the conflicts of modernity: An essay on desire, practical reasoning, and narrative*. Cambridge: Cambridge University Press.
- Margolis, J. (1980). The trouble with homunculus theories. *Philosophy of Science*, 47(2), 244–259.
- McGilchrist, I. (2019). Cerebral lateralisation and religion: a phenomenological approach. *Religion, Brain & Behavior*, 9, 319–339. doi:10.1080/2153599X.2019.1604411
- Robinson, D. (ed.). (2007). *Neuroscience and philosophy: Brain, mind, and language*. New York: Columbia University Press.
- Smit, H., & Hacker, P. (2013). Seven misconceptions about the mereological fallacy: A compilation for the perplexed. *Erkenntnis*, 79, (5), 1077–1097.
- Taylor, C. (1989). *Sources of the self: The making of the modern identity*. Cambridge: Harvard University Press.
- Taylor, C. (2007). *A secular age*. Cambridge: Harvard University Press.
- Whitaker, H. A. (1982). Dichotomania: An essay on our left and right brains. *Journal of Visual Verbal Language*, 2, 7–13.
- Wittgenstein, L. (1953). *Philosophical investigations*. Oxford: Blackwell.
- Zahavi, D. (2014). *Self and other: Exploring subjectivity, empathy, and shame*. Oxford: Oxford University Press.