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Beyond Reductionism and Dualism: Towards a Christian Solution to the Mind Body Problem

Professor Nancey Murphy's paper on 'The Problem of Mental Causation', published in this journal (14:2 October 2002), presented readers with a set of ideas that may constitute a considerable step towards a Christian solution to the mind/body problem. In her presentation, however, she used an aspect of Donald M. MacKay's work in a way that he had made a point of avoiding. Ironically, the Reverend Lindsay Cullen's earlier criticism of Murphy's work on the mind/body problem likewise suffers from a misunderstanding of one of MacKay's most fundamental teachings (though Cullen did not cite MacKay directly). While MacKay may not have minded our updating his ideas to accommodate recent advances, it would be well worth our time to compare the reasoning of Cullen and Murphy with what MacKay had in mind. Without doing so, it is impossible to tell whether these recent contributions represent an improvement to MacKay's system or otherwise.

Keywords: Murphy, Cullen, MacKay, mind, body, non-reductive physicalism, complementary descriptions, downward causation

Before attempting to evaluate the respective contributions of Murphy, Cullen and MacKay, it may be helpful to remind ourselves why the problem of mental causation is so important to Christian scientists. After all, it is only when we accurately understand the problem that we can judge the relative value of different solutions.

A. Extremes to be Avoided

To begin with, it bears repeating just how important the mind/body problem is for scientists – particularly scientists who are also Christian believers. From at least the fourth century AD, some form of substance dualism (in the old Platonic tradition) has been the dominant metaphysical anthropology in the Christian Church.¹ But the recent rise in scientific understanding of our bodies has presented this position with some very difficult problems. Not least of these is the apparently impossible task of identifying any specific causal role for a substantial mind to play. On the other hand, at least since the demise of

¹ Though one could find support for this general claim in virtually any Systematic Theology, p. 191-192 of Berkhof, L. *Systematic Theology*, Edinburgh: The Banner of Truth Trust (1979) is particularly recommended.

the philosophical movement known as 'logical positivism', it has become equally clear that what would otherwise seem to be the natural alternative to substance dualism (i.e. reductionist monism) has insurmountable problems of its own. Now we are presented with this difficult problem: the historically orthodox doctrine of substance dualism and the scientific alternative of reductionist monism are *both untenable*. What are those of us who are interested in science and Christian belief to think?

The most obvious course of action is to search for some middle way between the two problematic extremes. The first step towards such a middle way would be to clarify the chief difficulties and advantages of the two paths we are now calling extreme. We will start with reductionist monism (henceforth, 'reductionism'). The main thing we can say in favour of reductionism with regard to the mind/body problem is that it takes the scientifically recognised laws of thermodynamics seriously. 'Because we have never observed an instance of energy in the physical world being either created or destroyed', our hypothetical reductionist might argue, 'and there can be no effect without a sufficient cause, all physical action must have a sufficient physical cause.' The reductionist would want to be firm on the point that even the mere wiggling of an index finger, for example, was caused *not* by any supposed *mental* activity (at least where 'mental' is meant to be opposed to 'physical'² but by a purely physical system of causes. Such a purely physical system of causes may involve the slow evolution by natural selection of muscles powered by the process of respiration and triggered by the signal of nerve impulses from the brain³ but it *must not* involve any 'non-physical' forces like motives, wills, angels, demons, or gods. Talk about minds, spirits and gods, therefore, is either nonsense, or just an artistic way of talking about the physical causes that really run the universe.

At the other extreme, we have the substance dualists (henceforth simply 'dualists'). A dualist may agree with the reductionist, saying that it would take a minor miracle for something non-physical (like a mind) to have physical effects, but would then have to argue that we should keep an open mind concerning the possibility of such miracles. Starting from the standard anti-telekinetic assumption, such a dualist would argue that whether we wanted to wiggle our index fingers or transform ourselves into African swallows, our wants (being essentially non-physical) could not directly change the physical world in the slightest bit. 'But, fortunately for us,' our hypothetical dualist might argue, 'there is a god who is powerful enough to make even the physical

2 It is, of course, logically possible for a reductionist to deny this opposition of 'mental' and 'physical'. The position thus produced (known as 'type identity' – see discussion in section B.1 below) has the advantage of *not* having to *deny* the causal efficacy of mental activity. The reason that the type identity thesis is so unpopular, however, is that no one has yet been able to identify even one natural mental type that *is* identical to some natural physical type.

3 Note both 'triggering' and 'structuring' causes as distinguished by Fred Dretske and called to our attention by Murphy (Murphy, N. 'The Problem of Mental Causation: How Does Reason Get Its Grip on the Brain?', *Science and Christian Belief* (2002) 14, 143-158 (p. 146)) are accounted for here by our hypothetical reductionist.

world do as he pleases.’ Though this god turns out to be somewhat reluctant to fulfil all but the most urgent of our desires for transformation, he is perfectly happy to fulfil our wishes concerning the movement of our bodies (within certain limits, of course). So, the dualist would argue, what actually happens when we wiggle our index fingers is that we *want* to wiggle them, and God, recognising that fact, obligingly steps in with (quite literally) a minor miracle.⁴

Now, we must admit that as we have stated them here, the worldviews of both the reductionist and the dualist are not particularly attractive. In fact, most of the work that goes on among thinkers interested in the mind/body problem can be understood as an effort to avoid either of these extremes as we have just presented them. While there will always be some who argue that we must simply choose which extreme is preferable, most philosophers at least offer some modification of their favourite extreme to make it more palatable. For example, Daniel Dennett⁵ acknowledges the pseudo-teleological system of evolution, founded on the ‘algorithmic necessity’ of the laws of natural selection. This move of Dennett’s allows him to import the meaningfulness of concepts such as ‘good ideas v. bad ideas’ into an otherwise reductionistic system. J. P. Moreland and others, on the other hand, introduce the idea that God’s images, in addition to God himself, have the power to perform minor miracles of the sort required by the occasionalist. They say that science should acknowledge the ‘fact’ that both the non-physical God and our non-physical minds have the ability to produce physical effects which have no physical cause – and that these physical causal gaps occur literally all of the time (i.e. not only in those relatively rare and scientifically unpredictable instances in which heavenly beings interact with the physical world, but every time a human being thinks).⁶

The principal moral of our investigation into these extreme views, however, is relatively simple: the problem of mental causation is as important as it is complex. After all, at some point we must say whether or not it is possible for a physical effect to have a non-physical cause. If we say that it is *not* possible, then we run the risk of having preserved science only at the expense of our Christian belief; but if we say that it is possible, then we must face the daunting conclusion that the entire epistemic system of science is founded on a faulty set of premises. Clearly, if the philosophers can help us avoid either of these extremes, then we should solicit their help. And this is exactly what Professor Nancy Murphy is doing when she calls theological attention to the philosophical camp known in modern mental philosophy as ‘nonreductive physicalism’.

4 ‘miracle’ is being used here only to mean that a god has interrupted the normal cycle of physical cause and effect such that something happens in the physical world which has no physical cause. This is, of course, very different from the biblical concept of miracle, but it is, nonetheless, a widely employed concept – especially among modernist thinkers.

5 See Dennett, D.C. *Brainchildren: Essays on Designing Minds*, Cambridge, Mass.: MIT Press (1998) and Dennett, D.C. *Darwin’s Dangerous Idea: Evolution and the Meanings of Life*, New York: Simon & Schuster (1995)

6 See, for example, Moreland, J.P. ‘Complementarity, Agency Theory, and the God-of-the-Gaps’, *Perspectives on Science and Christian Faith* (1994) 49(2), 2-13.

B. Summoning MacKay's Help in the Search for a Middle Way

As several recent articles in this journal have argued,⁷ the idea of taking the physical aspect of our creatureliness seriously (as non-reductive physicalism allows us to do) holds great promise for biblical Christianity. But the extremely difficult task for non-reductive physicalists is that of coming up with a way to be truly non-reductive and truly physicalist at the same time. Murphy has attempted several times, most recently in this journal,⁸ to provide us with an account of mental causation that does not violate the law of normative physical causal closure. The trouble, however, is that, as the Reverend Lindsay Cullen pointed out in his critique,⁹ if we truly accept physicalism 'there does not seem to be any causal gap into which we may fit the "mutual conditioning" of a system and its parts to which Murphy refers'.¹⁰

Murphy incorporates some of D. M. MacKay's work into her most recent effort to explain how downward causation (the phenomenon by which higher-order entities, like minds, make their presence felt within the tight causal nexus of the lower-order, physical entities that realise them) might work.¹¹ Ironically, Cullen (apparently without realising it) also relies on some of MacKay's reasoning in his attempt to offer a constructive critique of Murphy's system. Since MacKay's support is being marshalled on either side of this issue, perhaps it would be appropriate to ask what he would have thought about the ways in which Murphy and Cullen use his work. After all, it may very well be that if we rightly understand the original system of MacKay's thought, we will be able to introduce any benefits associated with non-reductive physicalism into our theological framework without ever having to appeal to such obscure concepts as supervenience and downward causation. It may turn out that even the term 'non-reductive physicalism' will be less desirable to the Christian believer than MacKay's 'comprehensive realism', but this terminological issue is not nearly as important as the conceptual issue that underlies it.

1. Cullen's Identity Thesis

Since Murphy's work is the central focus of this paper, we will save it until last,

7 See, for example, Jeeves, M.A. 'Changing Portraits of Human Nature', *Science and Christian Belief* (2002) 14(1), 3-32 and Green, J.B. 'Eschatology and the Nature of Humans: A Reconsideration of Pertinent Biblical Evidence', *Science and Christian Belief* (2002) 14(1), 33-50.

8 *op.cit.*, Murphy [3]

9 Cullen, L. 'Nancey Murphy, Supervenience and Causality', *Science and Christian Belief* (2001) 13(1), 39-50 (quotation from p. 45)

10 To be fair, we should also point out that Murphy has never *claimed* to have adequately solved this problem. In fact, she stated the opposite quite clearly in her response to Cullen's critique (Murphy, N. 'Response to Cullen', *Science and Christian Belief* (2001) 13(2), 161-163 (p. 162)).

11 She uses the same bit of MacKay's work in a very similar way in her Murphy, N. 'Supervenience and the Downward Efficacy of the Mental: A Nonreductive Physicalist Account of Human Action', In Robert John Russell, Nancey Murphy, Theo C. Meyering & Michael A. Aribib (Editors) *Neuroscience and the Person: Scientific Perspectives on Divine Action*, Vatican City State: Vatican Observatory Publications (1999) , 147-164

looking first at the use to which Cullen puts MacKay's ideas in his critique of Murphy's system. For this purpose, it will be necessary for us to quote what appears to be one of the most important paragraphs of Cullen's paper. Though, as stated in the abstract, Cullen never cites MacKay directly, readers familiar with MacKay's work will recognise the concept of complementary descriptions behind the remarks of Dr Mary Midgely, around which Cullen's reasoning is ostensibly built.¹² Cullen argues in this paragraph that a right understanding of complementary descriptions implies the 'common sense' hypothesis of identity theory. He further argues that the right kind of identity theory will allow us to explain mental causation without having to appeal to supervenience. Shortened slightly for our purposes, the paragraph we will be chiefly concerned with reads as follows:

Having chosen to use an unusual definition of supervenience, the primary weakness in Murphy's argument stems from her contention, without substantiation, that *descriptions at different levels of reality are related by supervenience*, so defined. While Murphy rejects without comment the idea that such *descriptions* are related by identity, this surely is the common-sense point of view. As philosopher Mary Midgely has remarked, we may make any number of different maps of an area – political, geographic, atmospheric and so on – according to our purpose but each of these maps is a representation of identical territory . . . [likewise] It has seemed only reasonable to the majority of scientists and philosophers to see *both of these descriptions as pertaining to an identical event*. Murphy claims that only non-reductive physicalism is proof against an elimination of the efficacy of mental causality. However, properly understood, a token identity relationship, whether in a reductive or non-reductive setting will maintain the causal efficacy of the mental. For when I say that my recalling of the printer's ink caused me to decide to go out and shop, this is *identical* to *saying* that one configuration of neurones changed to a different configuration. Either way, the single *event* in question was truly causal – I simply choose the description of that event which is most helpful in the circumstances.¹³

Despite being one of the most important paragraphs to Cullen's argument, a close analysis will demonstrate at least one important ambiguity. This ambiguity is rooted in Cullen's failure to distinguish between a *description* and a *thing described*. After all, he seems to be implying that a given mental description and a given physical description are *identical* (or, as he puts it, 'related by identity'). Whether or not the *thing described* by a mental description is identical to the *thing described* by a physical description is a point that is open to debate. On the other hand, Cullen clearly slips into error when he claims that

¹² The point Midgely was making (apparently in conversation with Cullen) is precisely the point that D. M. MacKay began his philosophical career publicising. See for example, his response to Peter Alexander in the Journal *Mind* (MacKay, D.M. 'Complementary Descriptions (Reply to Alexander)', *Mind: A Quarterly Review of Psychology and Philosophy* (1957) 66, 390-394)

¹³ *op.cit.*, Cullen [9] p. 48 (italics added)

the *descriptions themselves* are identical.

But it is important for us to realise that Cullen's error runs much deeper than any mere verbal imprecision. After all, if we are to assume that Cullen intended to write about the *things described* by mental or physical descriptions, it will be important for us to understand what these 'things' are. In particular, we need to know whether these mental or physical descriptions refer to entities or events.

While this may seem like a simple question at first, further consideration will reveal just how much depends on how we answer it. Before we can rightly estimate the importance of this question, however, we must first make a few distinctions between some of the many different things that could be meant by Cullen's inference that the things described 'are related by identity'.

Cullen himself suggests the first distinction that needs to be made between the various things that could be meant by 'identity' in this context when he says that 'a token identity relationship . . . will maintain the causal efficacy of the mental'. In adding the word 'token' here, he is referring to the distinction known in philosophical circles as the type/token distinction. Murphy has explained this distinction in the following way:

Token identity is the thesis that every particular mental event or property is identical with *some* physical event or other; type identity is a stronger thesis to the effect that every type of mental event is identical with a type of physical event.¹⁴

Murphy's explanation of this distinction should interest us in two ways: first, because it is both helpful and concise, and secondly, because if we read it closely, we will see that Cullen is not alone in allowing the important ambiguity referred to earlier to slip into his writing. After all, why is it that the phrase 'event or property', which features heavily in the first clause of this distinction, is paralleled by the phrase 'event or other' and eventually just 'event'? Are we to assume that it makes no difference whether it is an event or a property that is said to be the identical referent of both mental and physical descriptions? The implication, by both Murphy¹⁵ and Cullen, would appear to be 'yes', but the *answer* (as D. M. MacKay has pointed out repeatedly¹⁶) is an emphatic 'no'. After all, while it may make perfect sense to say that the descriptions 'an experimental subject sitting under a brain scanner demonstrating activity in such and such a brain region' and 'an experimental subject sitting under a brain scanner contemplating mathematics' describe the same *event* (i.e. we

14 Murphy, N. 'Human Nature: Historical, Scientific, and Religious Issues', In Brown, W.S., Murphy, N. & Malony, H.N. (eds.) *Whatever Happened to the Soul?: Scientific and Theological Portraits of Human Nature*, Minneapolis: Fortress Press (1998), 1-30 (p. 10)

15 To be fair to Murphy, we must remember that this definition was taken from one of her many papers written for a non-philosophical audience.

16 See especially pp. 11-12 of MacKay, D.M. 'What Makes a Contradiction?', *Faith and Thought* (1968) 97, 7-14.

may be justified in saying that these instances of brain and mind activity can be identified as the same multifaceted event), we would *still not* be justified in saying that the physical and mental *properties* showcased in this experiment can be identified as the same properties. MacKay underlined the fact that a single event can have importantly different mental and physical properties with the following example:

The fact that a quadratic equation with two roots is embodied in a piece of electronic hardware in no way implies that the hardware at any level of description as hardware ‘has two roots’. The notion makes no sense, even though the existence of two roots has well-defined hardware implications.¹⁷

Mental properties cannot be reduced to physical (brain) properties any more than mathematical properties can be reduced to physical (electronic) properties. That *kind* of identity just doesn’t work. Cullen was *right* in saying that there is a kind of token identity theory that accords with both common sense and MacKay’s doctrine of complementary descriptions, but once we edit his paragraph for conceptual imprecision we see that the *kind* of token identity theory we are talking about is the token identity of mental and physical events, not the identification of mental properties with physical properties. Since Cullen offered us *no* argument for *property* identity (which would be required for reductive physicalism) the kind of token identity theory he leaves us with (i.e. *event* token identity) does not sound substantially different from nonreductive physicalism. Therefore, if we limit Cullen’s identity thesis to only that kind which flows from his argument, then his critique of Murphy’s nonreductive physicalism loses its sting.

2. Murphy, Supervenience and Downward Causation

But what about Cullen’s repeated protest that supervenience, a favourite concept of Murphy’s, is ‘both eccentric and unhelpful’? Does a right understanding of MacKay’s doctrine of complementary descriptions (or, to use the less informative and more cumbersome terminology of mental philosophy, ‘event token identity theory’) not alleviate the need for such complex concepts anyway? Unfortunately, the answer to the problem Murphy has her finger on is not quite as simple as that. After all, while our analysis of Cullen’s argument from complementarity may work with regard to events, when Murphy employs the concept of supervenience, she seems to be more interested in the relationship between mental and physical *properties*.

While a full discussion of supervenience would take us *considerably* outside the scope of this paper, it *is* worth mentioning that Murphy uses it as a way of calling attention to the dependence of higher-order properties (such as mental

17 MacKay, D.M. ‘In What Sense Can a Computer “Understand”’, *Science and Christian Belief* (1989) 1(1), 27-39 (p. 34) N.B.: This is the essay posthumously published in the first edition of this journal.

properties) on lower-order properties (such as physical properties) without implying that higher-order properties can be reduced to the lower-order properties on which they depend.¹⁸ This is why she calls her position ‘non-reductive physicalism’. Because there is no sense in preserving a set of properties from reduction if it is impossible for it to ever make any real difference in the world, it is naturally quite important for Murphy to safeguard her position against reduction through an apt account of mental causation. It is evidently with this goal in mind that she sets out to provide us with an account of what she calls ‘downward causation’.¹⁹

It is in making her case for downward causation that Murphy relies most directly on MacKay’s work. She uses one of MacKay’s simplified information-flow models of an evaluative system (such as a thermostat or auto-pilot) to demonstrate the fact that higher order properties are causally efficacious. In doing so, however, she departs at one very important point from his understanding of what the diagram demonstrates. In particular, in calling her analysis an account of ‘downward causation’, she is implying that the activity of some higher-order thing is causally affecting the activity of lower-order things – a claim that MacKay expressly denied.

Perhaps it would be helpful at this point to attempt an explanation of why it was that MacKay resisted any tendency to talk in terms of downward causation. To begin such an explanation, it may be helpful to note the fact that what MacKay had in mind when he produced the information-flow diagram Murphy borrows was not that the activity of entities at one level has effects among the activity of lower level entities, but that *causation* itself (i.e. the system of one multifaceted event leading up to another multifaceted event) can be described at different levels. Though the practice of applying this principle to mental causation has, unfortunately, not been very widespread as of late, MacKay was deliberate in pointing out that the distinction between different levels of causation did not originate with him. MacKay addresses this issue most directly in his paper presented to the 9th International Wittgenstein Symposium in which he explains his position on downward causation. While explaining his tendency to compare the relationship between the mind and body with the relationship between a mathematical equation and an electronic calculator set up to solve it, he says:

The example also illustrates well the need to distinguish between two kinds or levels of ‘causal’ connection – between *physical* causes on the one hand, and what systems engineers today term *informational* or *systemic* causes on the other. Physical explanations account for changes in a system in terms of the flow and exchange of energy and force; informational explanations do so in terms of the flow and exchange of information and control.

18 Murphy’s use of supervenience gets very technical, and has changed somewhat in recent years, but this brief characterisation should be sufficient for our present purposes.

19 As she points out in her most recent paper for this journal, Murphy did not invent the term ‘downward causation’, though she does use it rather extensively.

The first trace the dependence of *force* on *force*; the second the dependence of *form* on *form*. Each legitimately uses the explanatory term ‘because’; but much confusion arises if we fail to follow Aristotle’s lead in distinguishing between the quite different senses of ‘cause’ involved. In particular, to speak of ‘downward causation’ between the informational and physical levels, as is done by Sperry for example, can give rise to much misunderstanding, with its suggestion of some kind of convergence of forces from ‘above’ and ‘below’ upon the physical components, which Sperry describes as ‘pushed and hauled about’ by the ‘causes’ operating at the higher level. It would seem oddly unhelpful to a computer scientist to speak of the transistors in his machine as ‘pushed and hauled about’ by the equation it is solving!²⁰

It very well may be the case that Murphy has not been using the term ‘downward causation’ in quite the same way Sperry and others have. After all, she does not (at least in any of her papers for this journal) directly cite the need for lower-level physical causal gaps. On the other hand, the fact that she continues to use the terms ‘downward causation’ and even ‘top-down causation’²¹ instead of ‘systemic causation’, or ‘informational causation’ suggests that she has not fully taken MacKay’s point. While MacKay certainly acknowledged the fact that properties of events at one level of description (e.g. mental descriptions) were necessarily connected to properties of the same event at other levels of description (e.g. physical descriptions), he repeatedly insisted that this connection is ‘more intimate than cause and effect’.²²

C. Taking Stock

The issues we have dealt with in this paper are complex. For this reason, it may be helpful, by way of conclusion, to take stock of what we have done.

We started with a brief explanation and evaluation of the two most extreme views concerning the relationship between our mental and bodily experience – which we called ‘reductionism’ and ‘dualism’. We then pointed out a slight imprecision in Cullen’s critique of Murphy’s nonreductive physicalism. While his way of stating the issue opened the door to reductionism, we saw that a more careful analysis of the logical principle upon which he built his argument only justified the identity of mental and physical *events*, not *properties*. That kept us from the dangers mentioned in our evaluation of reductionism. We then proceeded to discuss a bit of terminology used by Murphy that strongly sug-

20 MacKay, D.M. ‘The Costs of Mechanistic Embodiment’, In Chisholm, R.M., Marek, J.C., Blackmore, J.T. & Hübner, A. *Philosophy of Mind / Philosophy of Psychology* [Proceedings of the 9th International Wittgenstein Symposium], Vienna: Hölder-Pichler-Tempsky (1985), 105-111 (pp. 105-6).

21 *op.cit.*, Murphy [10], p. 162.

22 See MacKay, D.M. ‘Do We “Control” Our Brains?’, *The Behavioural and Brain Sciences*, (1985) 8, 546 and MacKay, D.M. *Christianity in a Mechanistic Universe* (and Other Essays), London: Inter-Varsity Fellowship (1966) p. 59. See also a parallel passage on p. 63 of MacKay, D.M. *Behind the Eye*, Oxford: Basil Blackwell (1991) and *Thought* (1968) 97, 7-14.

gests a violation of the law of normative physical causal closure (i.e. dualism). Finally, we looked at what MacKay had to say about downward causation and his brief explanation of how to answer the question of mental causation without having recourse to such misleading terminology.

Though we must conclude this brief study, as Murphy concluded her most recent paper, by admitting that the best we can hope to have sorted out is a very small piece of a very large puzzle, we must also underline the fact that MacKay has provided us with some extremely helpful work on this issue that should not be overlooked. If we recognise that the only kinds of identity statements that are justified by a proper understanding of complementary descriptions are those token identity statements that pertain to events, then we can affirm the thesis of normative physical causal closure that is the basis of all physical science while simultaneously avoiding the extreme of reductionist materialism. But we can only avoid the dangers of dualism as long as we refuse to allow any talk of causation *between* complementary levels of description. Though it is necessary for us to acknowledge, as philosophers from Aristotle to MacKay and from Dretske to Murphy have done, the fact that there are different types of causation, it is also necessary for us to acknowledge that inter-level causation is *not* one of them. After all, to suggest that something at one level of description *caused* something at another level when those descriptions refer to *the very same multifaceted event* is to suggest (albeit in a rather strange way) that an event caused *itself*.

In closing, the most important thing for us to highlight is the way in which MacKay's doctrine of complementary descriptions takes the pressure out of the problem of mental causation. With regard to Murphy's question of 'how reason gets its grip on the brain', for example, MacKay's response would have been elegantly simple. He would have said that reason doesn't *need* to get a grip on our brains any more than the words that make up this sentence need to get a grip on the ink printed on this paper. The brute fact that some mind-oriented descriptions and some brain-oriented descriptions appear to be constantly conjoined is the very fact that makes neuroscience interesting.

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