

THIRTY FIVE YEARS ON - IS CONSCIOUSNESS STILL A BRAIN PROCESS?

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[As published in J. Brandl and W.L. Gombocz (Eds.), *The Mind of Donald Davidson*, *Grazer Philosophische Studien* (1989) **36**, 17-29]

This is a shortened version of a paper entitled 'Thirty years on - Is consciousness still a brain process?' which I wrote some two years ago in celebration of the thirtieth anniversary of the publication, in February 1956, of my paper¹ 'Is consciousness a brain process?' which is generally accepted as the primary source for the Australian version of the mind-brain identity theory. The paper prepared in 1986 appeared earlier this year in the *Australasian Journal of Philosophy*.² But since the *Australasian Journal of Philosophy* is probably not very widely read in Austria and Yugoslavia, and since the paper deals quite extensively with a number of themes from Professor Davidson's philosophy, it seemed not altogether inappropriate that I should present a version of it on this occasion.

The paper begins with the observation that whereas in 1956 every philosopher you met was quite convinced that whatever answer to the mind-body problem, if there is one, is true, materialism must be false, today it is almost as difficult, at least in the English-speaking world, to find a philosopher who is prepared to defend any other position. Contemporary philosophical materialism, however, is a horse of a very different colour from the thesis for which I was arguing in 1956. Two striking differences stand out.

- (1) The thesis which I was arguing for in 1956 was restricted in its application to mental events, to sensations, mental images and thought occurrences and the associated activities of thinking, imagining and paying attention in as far as they are covert or hidden from the view or hearing of another person. Mental states, I assumed following Ryle³, are dispositions to talk and behave in a variety of publicly

¹ U. T. Place, '[Is consciousness a brain process?](#)' *British Journal of Psychology*, 1956, XLVII, 44-50.

² U. T. Place, '[Thirty years on - Is consciousness still a brain process?](#)' *Australasian Journal of Philosophy*, 1988, 66, 208-219.

³ G. Ryle, *The Concept of Mind*, London, Hutchinson, 1949.

observable ways, and as such present no special problem from the standpoint of an objective psychology. Contemporary materialists by contrast have followed David Armstrong in his 1968 book *A Materialist Theory of the Mind*⁴ in rejecting the Rylean analysis of dispositions in general and mental dispositions in particular, in favour of the view that mental states in general and propositional attitudes in particular are identical with some state of the brain microstructure.

- (2) In 1956 the mind-brain identity theory was presented as scientific hypothesis which would stand or fall on the empirical evidence of psycho-physical correlation. Contemporary philosophical materialists, by contrast, have taken their cue in this respect from Professor Davidson in holding
- (a) that the "token" identity between mental states and their "physical" counterparts in the brain can be deduced *a priori* from principles which are either self-evident or, at least, intuitively plausible, and
 - (b) that, since on Davidson's view there are and can be no "psycho-physical bridge laws", empirical evidence of psycho-physical correlation is irrelevant to the truth of this form of materialism.

In the paper, I argue for a return to the 1956 position both with respect to the restriction of the identity thesis to the case of mental processes and with respect to its status as an empirical scientific hypothesis. With respect to the first of these, I argue that the relationship between a dispositional property and its so-called "categorical basis" in the microstructure of the entity which possesses that property is a relation, not of identity, but of causal dependence on the part of the disposition on the state of the microstructure. The example which I use to illustrate this point is the case of the horsepower of a motor car which, in the case of a car powered by a reciprocating internal combustion engine, depends (causally) on, among other things, the cubic capacity of its cylinders, but is in no sense identical with their cubic capacity. Likewise the car's propensity to understeer is not identical with the mis-alignment of the front wheels or the wear on the steering gear on which it presumably

⁴ D. M. Armstrong, *A Materialist Theory of the Mind*, London, Routledge and Kegan Paul, 1968.

depends. On this analogy, we should expect that my knowing how to calculate a square root or my believing that it is going to rain depend upon, but are not identical with some state of the microstructure of the brain.

In arguing for a return to the 1956 notion that the identity thesis should be regarded as an empirical scientific hypothesis, I begin with an examination of the *a priori* proof which Davidson provides in his paper 'Mental events'⁵ for what he calls "anomalous monism". In this paper, Davidson begins by attempting to reconcile three principles which he thinks most philosophers would be inclined to accept as self-evidently true, were it not for the fact that they appear mutually inconsistent. The first of these principles

asserts that at least some mental events interact causally with physical events.

The second principle

is that where there is causality there must be a law: events related as cause and effect fall under strict deterministic laws.

The third principle

is that there are no strict deterministic laws on the basis of which mental events can be predicted and explained (the Anomalism of the Mental).

These principles, he thinks, can be reconciled by adopting a version of the mind-brain identity theory according to which every event for which there is a true mental description there is also a true physical description; but, whereas there are strict deterministic laws which relate these events under their physical descriptions to other events so described, there are no such strict deterministic laws relating an event described in mental terms to other events, whether described in mental or in physical terms. This is the principle which has become known as the "token identity" version of the mind-brain identity thesis in contrast to the earlier "type identity" version for which I was arguing in 1956.

However, as the argument of the paper unfolds, it becomes apparent that the principle of the token identity of every mental event with some physical event is being presented, not just as a way of reconciling the three principles, but as the conclusion of an *a priori* proof in which it is deduced from three, arguably,

⁵ D. Davidson, Mental events. In L. Foster and J. W. Swanson (eds.) *Experience and Theory*. Amherst, Mass: University of Massachusetts Press, 1970, pp. 79-101.

self-evident premises. The first two of these premises coincide with the first and second of the three principles stated above, while the third premise which holds

that there are no (strict) psychophysical laws

is presented as a principle closely related to and made plausible by the third principle, the so-called principle of the Anomalism of the Mental.

In the published version of the paper written in 1986, I presented my own version of Davidson's argument for Anomalous Monism. This version of the argument is set out in full on Table 1⁶.

Table 1. A version of Davidson's argument for Anomalous Monism.

Part 1:

1. Every human action has one or more propositional attitudes as its immediate cause.
 2. Every human action has a brain state as its immediate cause,
 3. Events cannot have more than one immediate cause.
- ERGO 4. The set of propositional attitudes which constitute the immediate cause of a particular human action are identical with the brain state which constitutes the immediate cause of that action.

Part 2 then proceeds as follows:

5. All causation presupposes a universally quantified causal law relating events or states of the cause type to states or events of the effect type.
 6. No such universally quantified causal law can be stated relating propositional attitudes to the action types they cause.
 7. Universally quantified causal laws can, however, be stated relating brain states and events to the action types they cause.
- ERGO 8. No universally quantified law statement can be true which relates particular brain states with which they are (by 4 above) identical. In other words, there are no psycho-physical bridge laws.

⁶ Professor Davidson has protested in discussion that this is not his argument. That is certainly true. I would contend, nevertheless, (a) that the two arguments are closely related, and (b) that Davidson is committed by what he says either in 'Mental events' or elsewhere in his writings, if not to all the propositions which I have taken as premises in my version of the argument, then to something very close to them.

As you will see the argument consists of two parts. Part 1. has as its conclusion a version of the mind-brain identity thesis which holds that

4. The set of propositional attitudes which constitute the immediate cause of a particular human action are identical with the brain state which constitutes the immediate cause of that action.

You will notice that this version of the thesis is neutral with respect to the issue between its token and type identity versions. It is deduced from three premises the first of which

1. Every human action has one or more propositional attitudes as its immediate cause.

is a version of Davidson's first principle and first premise, as stated in 'Mental events', particularized to the relation between propositional attitudes (mental events) and human actions (physical events) in the light of the argument which he presents in 'Actions, reasons and causes'⁷.

The second premise

2. Every human action has a brain state as its immediate cause,

does not appear to be explicitly stated by Davidson, either in 'Mental events' or elsewhere in his writings; but it is difficult to see what sense can be made of his endorsement of the identity theory, unless this principle is implicitly assumed.

The third premise

3. Events cannot have more than one immediate cause.

is, likewise, not explicitly stated. It appears, however, to be a consequence of the principle which is stated by Davidson in his paper 'The individuation of events'⁸ in which events are presented as individuated by their unique position in a causal chain or causal nexus.

The effect of Part 2 of my version of Davidson's argument for Anomalous Monism is to narrow down the identity thesis which has been deduced as the conclusion of Part 1 of the argument to the "token" form of that thesis by deducing his third premise

⁷ D. Davidson Actions, reasons and causes. *Journal of Philosophy* (1963) 60: 685-700.

⁸ D. Davidson The individuation of events. In N. Rescher (ed.) *Essays in Honor of Carl G. Hempel* Dordrecht: Reidel, 1969, pp. 216-234.

There are no psychophysical bridge laws.

in the form

8. No universally quantified law statement can be true which relates particular brain states with which they are (by 4 above) identical.

from the conclusion of Part 1, together with three further premises:

5. All causation presupposes a universally quantified causal law relating events or states of the cause type to states or events of the effect type⁹,

which is how I interpret Davidson's second principle and second premise,

6. No such universally quantified causal law can be stated relating propositional attitudes to the action types they cause,

which I take to be a corollary of Davidson's third principle (the Anomalism of the Mental), and

7. Universally quantified causal laws can, however, be stated relating brain states and events to the action types they cause,

which, like my premise 2, I take to be implied by, if not explicitly stated by Davidson in 'Mental events'.

I would justify my re-statement of Davidson's argument in this way on two grounds. In the first place, the conclusion of Davidson's proof of Anomalous Monism is not, as I think he would concede, strictly entailed by the three premises, as stated, and is in need of additional premises in order to carry conviction. Secondly, there are a number of considerations which lead me to prefer a version of the argument in which the principle that there are no psychophysical bridge laws, which Davidson takes as a premise, is, instead, deduced as a conclusion from other premises all of which are, I believe, either stated or implied in 'Mental events' or elsewhere in Davidson's writings.

Quite apart from the fact that an argument is appreciably strengthened, if one of its former premises can be eliminated by deducing it from other premises which are already explicitly or implicitly contained within it, I have two reasons for preferring this way of formulating Davidson's argument.

As a psychologist brought up on the Weber/Fechner Law and the science of Psychophysics for which it provided the foundation, I find the principle that there are and can be no psycho-physical bridge laws decidedly counter-intuitive. As I see it, Davidson's intuitions in this respect depend on taking as his example the case of a law statement which relates a propositional attitude, such as the belief that we all share that we

⁹ My ontology includes both events (whereby a change occurs in the properties of or the relations between entities) and states (whereby the properties of and relations between entities remain constant over a period of time); whereas, as emerged in discussion, Davidson's ontology recognizes events, but not states.

are in a place called Radkersburg/Radgona on the Austrian/Yugoslav border, to some unknown state of the brain microstructure which is common to the brains of all those who share that belief. I share his intuitions with respect to that example; but as we have seen, this is a case where, for me, the psychophysical relation is one of causal dependence of the mental on the physical and not of identity, and I see no difficulty in supposing that the same propositional attitude might result from different states of the brain microstructure in different cases.

My counter-intuitions which support the concept of psycho-physical bridge laws depend on taking the example which Fechner had in mind when he spoke of "inner psychophysics", the relation between a sensation on the one hand and the correlated neural activity in the corresponding sensory projection area of the cerebral cortex on the other. In relation to this example, my intuitions line up with those of the psychologist E.G. Boring when he says in his original statement of the mind-brain identity theory in his 1933 book, *the Physical Dimensions of Consciousness*¹⁰,

If we were to find a perfect correlation between sensation *A* and neural process *a*, a precise correlation which we had reason to believe never failed, we should then identify *A* and *a*¹¹.

In other words, if two independent measures are invariably in step with one another, they measure one and the same process.

Not only do my intuitions agree with Boring's in so far as they relate to the conclusions we would naturally draw, if we were to encounter a correlation of this kind, it was precisely this kind of perfect correlation between the subject's reports of sensations, mental images, etc., on the one hand, and electrophysiological recordings of brain activity, on the other, which I envisaged as providing the empirical evidence for the identity hypothesis in 1956. Clearly, in the face of these counter-intuitions, it is going to take a formidable argument to persuade me to abandon them in favour of Davidson's principle.

My second reason for preferring this way of stating the argument for anomalous monism is that it makes explicit a principle on which, as I see it, any version of the mind-brain identity theory must rely. While I do not accept that the case for the truth of the mind-brain identity theory can be made out on the basis of an *a priori* argument alone, I accept that in order to use the empirical evidence of psycho-physical correlation to establish its truth, we need an *a priori* principle along the lines of the third premise of my version of Davidson's argument

3. Events cannot have more than one immediate cause

¹⁰ E. G. Boring, *The Physical Dimensions of Consciousness*, New York, Century, 1933.

¹¹ Boring, *op. cit.* p.14.

in order to exclude the possibility that the kind of discrete mental and physical states or events postulated by dualist interactionism might combine to cause a particular effect. Without some such principle, there is no way that evidence of psycho-physical correlation and of the causal effectiveness of brain activity in the control of performance can be used as evidence that dualist interactionism is false.

This brings me to a discussion of my reasons for rejecting the conclusions of the version of Davidson's argument for Anomalous Monism in the form in which I have stated it on Table 1. I reject the conclusions of both parts of the argument, not because I dispute the validity of the argument, but, in both cases, because I reject at least one of the premises from which it is deduced. In the case of Part 1, I have stated in the published paper that I reject conclusion 4 because I reject premise 3:

3. Events cannot have more than one immediate cause.

This is an odd claim in view of what I have just said about the need for some such principle as this in order to allow the evidence of psycho-physical correlation and the causal efficacy of the brain events involved to count against dualist interactionism. What I now think I should say is that this part of the argument depends for its plausibility on an ambiguity in the notion of "an immediate cause".

On one interpretation, the immediate cause of an event is what I call its "triggering event". This is the event which completes the set of causal conditions which are jointly sufficient for the coming about of the effect. The triggering event in this sense contrasts with what I call the "standing conditions" which are states of affairs which have been in position for a longer or shorter period of time before the set of sufficient conditions is completed, whereupon the initiation of the effect begins immediately. In this sense of "immediate cause", it is evident that there can be only one such immediate cause of an event. Moreover, this is the interpretation of premise 3 which I appeal to later in the paper in order to rule out the possibility that an action or verbal utterance could have another triggering event besides the neural event in the brain that acts in this way.

But if we interpret premise 3 in this way, premise 1

1. Every human action has one or more propositional attitudes as its immediate cause.

has to be rejected, in my view, on the grounds that a propositional attitude is a state and not an event. Propositional attitudes are standing conditions which are in position, in many cases, long before the actions to whose causation they contribute are initiated. Since they are not events, there is simply no way that they can act as triggering events with respect to the actions they cause.

There is, however, another sense of "immediate cause" which includes all those contributory causes which are still operative at the moment when an event is initiated, in contrast to the remote causes of the event, those factors which have contributed to the chain of events leading up to its initiation, but which have ceased

to operate by that time. For example my belief that it was going to rain was in this sense an immediate cause of my taking my umbrella with me when I went out this morning, but only a remote cause of my leaving the umbrella behind in the restaurant where we had lunch this afternoon.

But in *this* sense of "immediate cause", it is just not true that

3. Events cannot have more than one immediate cause.

To continue the same example, my action in taking my umbrella with me when I went out this morning will have at least three distinct immediate causes in this sense:

1. my belief that it is going to rain, acquired when listening to the weather forecast on the radio that morning,
2. my long-standing desire to avoid getting wet, and
3. the triggering event which prompted my action which might have been the occurrence of the thought - "It's going to rain", but which might equally have consisted simply in my noticing the umbrella as I approached the front door.

It follows from this that my reason for rejecting conclusion 4 of part 1 of my version of Davidson's argument depends on the interpretation that is given to the notion of "immediate cause". If "immediate cause" is interpreted as "triggering event", I accept premise 3, but reject premise 1. If "immediate cause" is defined as "a cause operative at the time of an event's initiation", I accept premise 1, but reject premise 3.

In the case of part 2 of the argument, I reject the conclusion

8. There are no psycho-physical bridge laws.

partly because I reject the prior conclusion 4 which asserts the identity of the propositional attitude and the brain state on which, in my view, it depends, but partly also because I reject premise 6

6. No such universally quantified causal law can be stated relating propositional attitudes to the action types they cause.

The reason for this is that I hold that a propositional attitude statement or, indeed, *any* dispositional statement is itself a universally quantified causal law in the sense that is required for the truth of proposition 5.

5. All causation presupposes a universally quantified causal law relating events or states of the cause type to states or events of the effect type.

All that a causal judgment requires, in my view, is a statement which is universally quantified over events or states of the types to which the causal judgment relates. It matters not if the events in question are restricted to the behaviour of a particular individual or to the limited window of time constituted by the duration of the particular disposition in question.

In other words dispositional statements of which I take propositional attitude statements to be a sub-variety are statements of the form

If at any time between t_1 and t_n causal condition c_1 combines with causal conditions $c_2 \dots c_n$, an event of the e type will occur.

A statement of this form is all that is required to deduce the counterfactual

if at any time between t_1 and t_n the causal conditions $c_1 \dots c_n$ had been fulfilled, an event of the e type would have occurred

which following John Mackie¹², I take to be what is meant by saying that the conditions $c_1 \dots c_n$ are causally effective relative to events of the e type¹³.

Having rejected what I take to be Professor Davidson's *a priori* argument for anomalous monism, I then proceed in the published paper to restate the case for the view that materialism is a scientific hypothesis which stands or falls on the empirical evidence of psycho-physical correlation. Because of time constraints, I can do no more than give you a very brief summary of the argument in this part of the paper. It is argued that of the four principal versions of mind-body dualism, interactionism, psycho-physical parallelism, epiphenomenalism and the dual-aspect theory, psycho-physical parallelism and epiphenomenalism are incoherent. This is shown by the following argument:

1. Our only evidence for the occurrence of private mental events consists in the first hand reports of their occurrence given by human beings.
2. A report of an event is a first hand report of that event if and only if the individual's ability to make that report is a direct consequence of that individual's having been aware of the occurrence of that event at the time.
3. It is a consequence of both psychophysical parallelism and epiphenomenalism that the verbal utterances of a speaker are not caused by his or her private mental events.

ERGO

4. It is a consequence of both psychophysical parallelism and epiphenomenalism that there can be no such thing as a first hand report of a private mental event.

ERGO

5. It is a consequence of both psychophysical parallelism and epiphenomenalism that there is no evidence for the occurrence of private mental events.

¹² J.L. Mackie, Counterfactuals and causal laws. In R.J. Butler (ed.) *Analytical Philosophy*, First Series. Oxford, Blackwell, 1962, pp. 66-80.

¹³ For a more extended discussion of the role of dispositions in causation and causal explanation, see my paper '[Causal laws, dispositional properties and causal explanations](#).' *Synthesis Philosophica* (1987) 2: 3, 149-160.

But if psycho-physical parallelism and epiphenomenalism are incoherent and if, as I am inclined to think, the dual-aspect theory collapses into the identity theory, we are left, assuming that idealism is not a viable option for scientific purposes, with the choice between dualist interactionism and the identity theory; and *that*, I maintain, is an empirical issue which is in process of being decided in favour of the identity theory by an increasingly formidable body of empirical evidence which leaves no room for a causally effective mental process which is distinct from the causally effective brain activity with which it is correlated.