

Unpublished response to a final draft (1997) of Graham, G., & Horgan, T. (2002). Sensations and grain processes. In J. H. Fetzer (Ed.), *Consciousness Evolving* (pp.63-86). John Benjamins. [There is some overlap with Place, U. T. (1999). Token- versus type-identity physicalism. *Anthropology and Philosophy*, 3(2), 21-31.]

'IS CONSCIOUSNESS A GRAIN PROCESS?' - A RESPONSE TO HORGAN & GRAHAM

Ullin T. Place

'Sensations and grain processes'

While I cannot but be flattered that Graham and Horgan should have dedicated their paper to the memory of two papers which Jack Smart and I published some forty years ago (Place 1956; Smart 1959), I am saddened by their endorsement of subsequent developments which, to my mind constitute a regression to the conceptual confusion we had struggled to dispel all those years ago. There are two respects in which the position adopted by Graham and Horgan represents a regression from clarity back into conceptual confusion. One is their conception of philosophical analysis and what it can tell us about the world (the *Metaphilosophical Issue*, as I shall call it). The other is their conception of the relation between the 'mental' and the 'physical', specifically the relation between a type of mental property (*qualia*) and the "physical" properties with which they are, to use Graham and Horgan's expression, "associated" (the *Type-Identity Issue*, as I shall call it).

The Metaphilosophical Issue

In those far off days we had been taught by Wittgenstein and the ordinary language philosophers

- (a) to draw a sharp distinction between conceptual (i.e. linguistic) issues and empirical issues,
- (b) that the philosopher's business was exclusively with the former and that the latter were to be decided by the relevant empirical science, and
- (c) that the traditional problems of philosophy, such as the mind-body problem, were generated by conceptual confusions due to misunderstandings of how ordinary language works.

Unlike Jack [Smart] who has been partly seduced by his subsequent adherence to Quine, predicate logic and Armstrong's central state materialism, I still subscribe to all three principles, as I make clear in my ['Linguistic behaviorism as a philosophy of empirical science'](#) which appeared last year in O'Donohue &

Kitchener (Eds.) *The Philosophy of Psychology* (Place, 1996). Many subsequent commentators, such as Cindy Macdonald (1989) who Graham and Horgan cite, have mistakenly construed 'Is consciousness a brain process?' as a move away from ordinary language philosophy and towards the current conception of the philosophy of mind as top-down cognitive neuroscience. In fact, as I construed it, it was an attempt to separate from the conceptual confusion that was and is the mind-body problem, a genuinely empirical issue (locating consciousness within the brain) which could then be handed over to the psychologists and neurophysiologists for resolution in the light of empirical neuropsychological research. Once that was done, the mind-body problem as a philosophical problem would cease to exist.

Needless to say, that was not a conclusion which was very popular with the philosophers. Even Jack in his 1959 paper jibbed at my suggestion that materialism is "a reasonable scientific hypothesis". What has developed since has been a remarkably successful rearguard action by the philosophers aimed at protecting their vested interest in the mind-body problem by undermining the three principles I have stated and restoring the conceptual confusion which Wittgenstein and ordinary language philosophy had worked hard to dispel.

The Type-Identity Issue ¹

The observation that identity is a relation between two names or descriptions which refer to the same individual (token-identity) or the same kind or class of things (type-identity) suggests that, unless the descriptions in question are specified, physicalism, understood as the claim that every mentally specified state or process is identical with some physically specified state or process, is empty hand-waving. It can be argued on behalf of the type-identity physicalist that future psycho-physiological research will allow us to specify which types of mentally-specified states or processes are identical with which physically-specified states or processes. No such possibility can be envisaged if token-identity physicalism is true.

Consequently, the case for token-identity physicalism must rest on an *a priori* argument. But the argument

¹ [This is the abstract that Place wrote for Place, U. T. (1999). Token- versus type-identity physicalism. *Anthropology and Philosophy*, 3(2), 21-31. The abstract was not included in this article.]

which Davidson offers is inconclusive. Token-identity physicalism is, therefore, in serious danger of being side-lined, should evidence supporting the stronger type-identity thesis be forthcoming.

*1. Identity statements are metalinguistic*²

Identity is a relation that holds, not between two entities, but between two names or descriptions. It is the relation whereby these two names or descriptions designate either the same individual (token-identity) or the same kind of individual or class of individuals (type-identity). The standard example of a token-identity statement is Frege's (1892) where the description 'The Morning Star' designates the same heavenly body as the description 'The Evening Star' and as the name 'Venus' when used of a planet in our solar system. In recent years the most widely cited example of a type-identity statement is the statement 'Water is H₂O' where the noun water designates the same kind of stuff or, if you prefer, the same class of objects as does H₂O.

In both these cases the identity relation is symmetrical and transitive. If the Morning Star is the same thing as the Evening Star, the Evening Star is the same thing as the Morning Star. If the Morning Star is the same thing as the Evening Star and the Evening Star is the same thing as Venus, the Morning Star is likewise the same thing as Venus. If every case of water is H₂O, every case of H₂O is water. If every case of water is H₂O and every case of H₂O is a case of the only liquid that boils at 100°C, then every case of water is a case of the only liquid that boils at 100°C.

*2. Where are the identity statements in current physicalism?*³

Let us now consider how these distinctions apply to the physicalist's claim that every mental state or process is identical with some physical state of or process in the brain.⁴ It should be obvious that, as it stands, this is *not* an identity statement. It is not a token-identity statement because it contains no name or description

² [This is a section with the same name written for Place, U. T. (1999). Token- versus type-identity physicalism. *Anthropology and Philosophy*, 3(2), 21-31. The section was not included in the published article.]

³ [This is a section with the same name written for Place, U. T. (1999). Token- versus type-identity physicalism. *Anthropology and Philosophy*, 3(2), 21-31. The section was not included in the published article.]

⁴ My own view (Place, 1988) is that the identity relation holds between mental process descriptions and the corresponding brain process descriptions, but *not* between descriptions of dispositional mental states and those describing the states of the brain microstructure on which those dispositions depend. On my view as advocated in *Dispositions: A Debate* (Armstrong, Martin, Place & Crane, 1996), the relation between a disposition and the feature of the structure of the dispositional property-bearer on which it depends is a *causal relation*; and, as Hume has taught us, if there is a causal relation between two things, they must be "distinct existences". They cannot be two descriptions of one and the same thing.

which designates a particular state or process either in a particular mind or in a particular brain at a particular moment of time. Nor is it a type-identity statement because, as understood by the physicalist, it is neither symmetrical nor transitive. The physicalist claims that every state or process that answers to the description 'mental' also answers to the description 'physical' and more specifically to the description 'physical state of or process in the brain'. But no physicalist would want to claim with Spinoza and the Idealists that everything that answers to the description 'physical state or process' also answers to the description 'mental state or process'. Nor can it be plausibly maintained that everything that answers to the description 'physical state of or process in the brain' also answers to the description 'mental state or process'. For there are too many such states or processes that have no obvious link with anything mental in any ordinary understanding of that word. One thinks, for example, of the brain mechanisms which control the temperature of the body. But it is true that if all mental states or processes are physical states of and processes in the brain, and it is also true that all physical states of and processes in the brain involve either potential or actual activity in a network of synaptically connected neurons, then all mental states and processes must involve either potential or actual activity in a network of synaptically connected neurons. In other words there is transitivity here. But without symmetry also, there is no identity.

3. Prospects of finding identity statements within type-identity physicalism

It is open to the type-identity physicalist to answer this objection by maintaining that the reason for the asymmetry between the plausibility of the claim that all mental things are physical and the implausibility of the claim that all physical things are mental is that the brain state or process in question has not yet been specified. Had it *been* specified and had the resulting identity statement been verified by the facts of psycho-physical correlation, we would have an established type-identity statement, on a par with 'Water is H₂O', in which it would be possible to claim not only that all mental state processes are states of or processes in the brain of *this particular kind*, but that every state of or process in the brain of *this particular kind* is a mental state or process.

*4. No prospect of finding identity statements within token-identity physicalism*⁵

⁵ [This is a section with the same name written for Place, U. T. (1999). Token- versus type-identity physicalism. *Anthropology and Philosophy*, 3(2), 21-31. The section was not included in the published article.]

But what of the token-identity physicalist? How can the claim that all mental states and processes are physical states and processes be firmed up in such a way that for each individual statement describing an actual mental state or process, there is a true token-identity asserting that *that* state or process is the same state or process as some physically specified state or process in the brain? For if, as the token-identity physicalist maintains, there are no true type-identity statements from which these token-identity statements can be deduced, we seem to be faced with a situation in which there is a uniquely identifying description for each individual mental state and process and each individual brain state or process, but no rule or principle to which we can appeal in order to determine which mentally characterised description designates the same individual as one of the physically characterised descriptions.

There is, perhaps, one principle to which a token-identity physicalist might appeal in order to establish the truth of a particular token-identity statement connecting a particular mentally-described state or process to a particular physically described state or process in the brain which does not depend on having shown that every mentally-described state or process *of that type* has a corresponding physical description. This is the principle that two descriptions must refer to one and the same thing, if both descriptions refer to something which occupies *exactly* the same volume of space at or over *exactly* the same moment or period of time. But important though this principle is,⁶ it is going to be of little assistance to the token-identity physicalist. For whereas physical processes and other events in the brain can be timed and located with increasing precision, thanks to recent advances in the field of brain imaging and electrophysiology, no such precision can be given to their corresponding mental descriptions, dependent as they are either on vague and unreliable introspective reports or on observations of subtle and seldom precisely clockable changes in the way an individual is disposed to talk and behave.

*5. Davidson's a priori argument for token-identity physicalism*⁷

It may be argued that the token-identity physicalist need not be concerned by the fact that there is no conceivable prospect of the truth of any psycho-physical token-identity statement being established in the

⁶ For example, I have used it (Armstrong, Martin, Place & Crane, 1996, p. 61) as an argument to show that because dispositional properties and their structural basis do not occupy the same volume of space, they cannot be one and the same thing. The most striking example of this is in the case of a magnetic field which surrounds the magnet on its *outside* whereas the alignments of iron molecules on which the existence of the magnetic field depends are *inside* it.

⁷ [This section is reproduced from Place, U. T. (1999). Token- versus type-identity physicalism. *Anthropology and Philosophy*, 3(2), 21-31.]

future which does not depend on the prior establishment of the truth of a psycho-physical type-identity statement. For, unlike type-identity physicalism, token-identity physicalism is not committed to any prediction as to what future empirical research will reveal. It is one of those doctrines, beloved of philosophers, theologians and the peddlers of superstition, which are rightly despised by empirical scientists in that they are so crafted as to render them immune to empirical disconfirmation (cf. Popper, 1963).

As originally formulated by Davidson (1970/1980), the case for token-identity physicalism rests not on the outcome of future psycho-physiological research, but on an *a priori* argument. The argument appears to take the form of the Hegelian Dialectic: ⁸

I. *Thesis*

Mental events, their causes and their effects are not subject to the kind of law (strict and universally quantified over individuals) which physical theory aims to describe.

II. *Antithesis*

IIa Mental events cause human actions.

IIb All causation involves the kind of law (strict and universally quantified over individuals as well as occasions) which physical theory aims to describe. ⁹

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IIc The relation between a mental event and the human action it causes is subject to the kind of law (strict and universally quantified over individuals) which physical theory aims to describe.

BUT I and IIc are contradictory. They can be reconciled, however, by

III. *Synthesis*

IIIa Every mental event is token identical with some physical event.

⁸ In [‘Thirty years on - Is consciousness still a brain process?’](#) (Place, 1988) I have given a different reconstruction of Davidson's argument. As I remarked on that occasion, "the argument . . . is notoriously difficult to state." Nevertheless, though I would still stand the 1988 reconstruction as representing one strand in Davidson's somewhat convoluted thinking on this issue, the present reconstruction is undoubtedly much closer to the original.

⁹ As stated elsewhere (Place, 1987; 1988; Armstrong, Martin, Place & Crane, 1996), I reject this premise on the grounds that, as Nelson Goodman (1955/1965, p. 39) points out, all that is required to "sustain" a causal counterfactual is a dispositional statement which is restricted in its scope to the behaviour of a single individual and which is universally quantified only over occasions during the lifetime of the disposition.

IIIb There are and never will be any true strict law statements universally quantified over individuals covering the causal relation between mental events so described and the actions they cause (= I above).

IIIc There either is or ultimately will be a true strict law statement universally quantified over individuals covering the causal relation between the various physical events with which particular mental events are token-identical and the actions they cause (= IIc above).

IIIb and IIIc are consistent. Hence, if we can accept that IIIb = I and that IIIc = IIc, then the apparent conflict between I and IIc is reconciled.

While this argument undoubtedly provides those who see a problem in reconciling the doctrine of the freedom of the human will with scientific determinism with a *motive* for subscribing to token-identity physicalism, it falls, like all arguments of this form, a long way short of providing a watertight *a priori* argument for the truth of the doctrine, even if the truth of all the argument's premises is accepted.

6. Conclusion: "perfect correlation is identity"¹⁰

I conclude that, apart from the dubious advantage that it is less susceptible than is the type-identity variety to empirical disconfirmation, token-identity physicalism has nothing to recommend it over its more robust type-identity rival. Moreover, so far from protecting physicalism from empirical disconfirmation, the token-identity version is itself in serious danger of being side-lined, if not actually falsified, by the emergence in the light of current and future research of the kind of "perfect correlation" between psychological and physiological measures which according to the originator of the identity theory, the psychologist E. G. Boring (1933, p. 16) constitutes identity. What Boring perhaps should have said is that if two measures correlate perfectly and spontaneously without requiring any experimental controls to induce them to do so, we have cast iron evidence that they measure one and the same thing.¹¹ If, as seems more than likely, future research using the recently discovered techniques of brain imaging will allow us to identify such perfect correlations between mentally and physically specified variables, we shall be in a position to assert with confidence that

¹⁰ [This section is reproduced from Place, U. T. (1999). Token- versus type-identity physicalism. *Anthropology and Philosophy*, 3(2), 21-31.]

¹¹ For a discussion of Boring's contribution see Place (1990). Boring's claim that "perfect correlation is identity" is discussed on pp. 28-9.

at least *some* specifiable type-identity statements involving mentally and physically characterised processes are known to be true. In that case, who will give a fig for token-identity physicalism?

My specific comments are as follows:¹²

In the 40 years since Smart's and Place's contributions, the landscape of philosophy of mind has changed in many ways. The empirical reliances of very recent philosophy of mind have expanded to include the cognitive sciences (not just neuroscience); central state materialism alternately has been displaced by causal role and functional specification theories of mind; fresh logical techniques have been introduced (e.g. the concept of supervenience); and it is less clear than it was in the 1950's whether materialism is to be preferred to some more ecumenical ontology (such as naturalism). [G & H, pp. 1-2]

“central state materialism alternately has been displaced by causal role and functional specification theories of mind”

The implication here is apparently that Jack [Smart] and I were advocating central state materialism. False. Jack acknowledged his conversion to central state materialism, as advocated by David Armstrong in his Smart (1967). I have *never* accepted it. I don't know what Graham and Horgan mean by the "causal role theory of mind". If this is Armstrong, then he has acknowledged in the introduction to the 1995 edition of *A Materialist Theory of the Mind* that he was anticipated in this respect [by] Jack's topic neutral analysis of phenomenal descriptions of sensory experience which in turn derives from my discussion of the phenomenological fallacy in 'Is consciousness a brain process?'

As far as functionalism is concerned, I argued in the discussion at the end of the Leeds conference¹³ that the difference between functionalism and the identity theory evaporates as soon as you start to define both consciousness and the brain in functional terms, a view which was supported by Jack in his paper at that conference.

“fresh logical techniques have been introduced (e.g. the concept of supervenience)”

I would describe supervenience as used in the philosophy mind as "a new obfuscation device" rather than as a "fresh logical technique".

“it is less clear than it was in the 1950's whether materialism is to be preferred to some more ecumenical ontology (such as naturalism)”

¹² [The references are to the pages of the final draft from 1997 of Graham & Horgan (2002).]

¹³ [The Symposium on 'Forty years of Australian Materialism', held at the Department of Philosophy of the University of Leeds, June 21st 1997.]

Certainly philosophers have succeeded in generating a great deal of fog on this issue since the 1950's; but what Graham and Horgan mean by "naturalism", who subscribes to it, how its ontology differs from that materialism, and why they think that that ontology is to be preferred is unclear to me.

At the level of cognitive architecture, there is certainly much theoretical work that purports to address itself to the functional-representational roles associated with states of consciousness. However, it seems to us that David Chalmers (1995, 1996) is right in maintaining that much of this work really addresses various other aspects of mentality that are often described in the language of consciousness – e.g., attentional processes, the ability to access and/or report one's own mental states, the deliberate control of one's own behaviour, etc. – rather than directly addressing phenomenal consciousness itself. [G & H, p. 6]

“associated with states of consciousness”

Why "associated with" rather than "of"? And why "states of consciousness" rather than "the process of consciousness" (i.e. understood as *including* such things as "e.g., attentional processes, the ability to access and/or report one's own mental states, the deliberate control of one's own behavior, etc.")? That's how I was using the term in 'Is consciousness a brain process?', as any one who read it as it was intended, i.e., as a sequel to 'The concept of heed' (Place 1954), would realise.

We begin with two familiar philosophical thought experiments, as groundwork for the discussion below; inverted qualia and absent qualia. It seems to make sense – not to be logically or conceptually contradictory – to imagine a "possible world" that is just like the actual world in all physical respects (including being governed all by the same physical laws that prevail in the actual world) but in which qualia are differently instantiated than they are in the actual world. On "inverted qualia" versions of this thought experiment, one imagines that phenomenal properties are instantiated in a way that is somehow inverted relative to their actual-world instantiations: for instance, the qualitative aspects of color-experiences are systematically inverted. (What it's like for someone to see red what it's like for us to see green; and so forth.) On "absent qualia" versions, one imagine that phenomenal properties are not instantiated at all. The creatures in the given world who are duplicates of humans and other sentient actual-world creatures are zombies, in the sense that the states they undergo lack phenomenal content altogether; although these zombies do instantiate those aspects of mentality that are characterizable in functional-representational terms, there isn't anything at all that it's like, for them, to undergo such states. [G & H, pp. 7-8]

“philosophical thought experiments”

Thought experiments can only provide *de dicto* information about our existing conceptual scheme. They cannot tell us anything *de re* about how things actually are. The idea that consulting our intuitions about what we can and cannot imagine can tell us about the way the world **IS** as distinct from how it is *currently construed* is a delusion fostered by Kripke's appeal to intuition to decide which of our terms are rigid designators and what those designators designate.

"The creatures in the given world who are duplicates of humans and other sentient actual-world creatures are zombies, in the sense that the states they undergo lack phenomenal content altogether; although these

zombies do instantiate those aspects of mentality that are characterizable in functional-representational terms, there isn't anything at all that it's like, for them, to undergo such states"

The argument that we can imagine a creature that behaves just as normal humans do, but has no phenomenal experiences, carries no more weight than the argument that was current in the 1950's that we can imagine a being with an empty cranium that has and reports the same phenomenal experiences as a normally equipped human. Both tell us about the limitations of our current scientifically uninformed conceptual scheme. They tell us nothing about what is or is not 'physically' possible.

The assumption that there seem to be possible worlds just like the actual world but containing inverted or absent qualia raises the question of just what sort of possibility we are considering when we say that apparently there could be inverted or absent qualia. In answering this question it will be useful to introduce a concept that is frequently employed in recent metaphysics and philosophy of mind: the notion of supervenience. Supervenience is an ontological determination relation between facts or properties at different levels of description: the lower level facts and properties determine the facts and properties supervenient upon them, in the sense that there cannot be a difference at the higher level without some underlying difference at the lower level. Two types of supervenience are important to distinguish: (1) logical (or conceptual) supervenience, which says that it would be logically impossible for the higher-level facts and properties to differ without some underlying lower-level difference; and (2) nomological (or natural) supervenience, which says that it would be contrary to certain laws of nature for there to be one kind of difference without the other. [G & H, p. 8]

"In answering this question it will be useful to introduce a concept that is frequently employed in recent metaphysics and philosophy of mind: the notion of supervenience."

Graham and Horgan are not going to persuade me that supervenience as applied to the mind-body relation is anything more than a piece of philosophical obfuscation without some good non-mental examples of what you're talking about. The only example I know is the case where the goodness of a knife or needle is said to supervene on its sharpness, and that doesn't help us much with the alleged supervenience of the mental on the physical.

"Two types of supervenience are important to distinguish: (1) logical (or conceptual) supervenience, which says that it would be logically impossible for the higher-level facts and properties to differ without some underlying lower-level difference; and (2) nomological (or natural) supervenience"

I have always understood that a state of affairs is logically impossible only if, given our existing semantic conventions any statement asserting its existence is self-contradictory. Now the only circumstances under which it becomes self-contradictory to assert that there was a change in a higher level fact or property without a corresponding change in the lower level facts or properties on which it depends is in a case like 'Water is H₂O' where the chemical composition of water is so well established and well known that water's being H₂O has become incorporated in our ordinary conceptual scheme. This, of course, is a case of type identity (two

descriptions with the same referents) rather than supervenience. But let that pass. What is important is that conceiving of water not being H₂O only becomes impossible, once the equation between the two concepts becomes a matter of established scientific fact and scientists begin to use that chemical composition in deciding whether a given sample is or is not water. As I hope to show, applying that principle makes nonsense of what Graham and Horgan go on to say about the relation of logical impossibility or the lack of it to the possibility of there being causal relations between phenomenal consciousness and anything else.

The apparent logical possibility of physical-duplicate worlds in which qualia are differently instantiated, or are absent altogether, creates a problem about their ontological status in relation to our overall scientific worldview. For, with the exception of phenomenal properties, it is plausible that the other properties posited in special sciences and in common sense are reductively explainable – and that reductive explanation rests on logical supervenience, typically involving the functional analyzability of the supervenient properties. As Chalmers (1995) observes:

A reductive explanation of a phenomenon need not require a reduction of that phenomenon, at least in some senses of that ambiguous term. In a certain sense, phenomena that can be realized in many different physical bases – learning, for example – might not be reducible in that we cannot identify learning with any lower-level phenomenon, but this multiple realizability does not stand in the way of reductively explaining any instance of learning in terms of lower-level phenomena. ... In general, a reductive explanation of a phenomenon is accompanied by some rough-and-ready analysis of the phenomenon in question, whether implicit or explicit. The notion of reproduction can be roughly analyzed in terms of the ability of an organism to produce another organism in a certain way. It follows that once we have explained the processes by which an organism produces another organism, we have explained that instance of reproduction. ... The possibility of this kind of analysis undergirds the possibility of reductive explanation in general. Without such an analysis, there would be no explanatory bridge from the lower-level physical facts to the phenomenon in question. With such an analysis in hand, all we need do is show how certain lower-level physical mechanisms allow the analysis to be satisfied, and an explanation will result. ... For the most interesting phenomena, including phenomena such as reproduction and learning, the relevant notions can be analyzed functionally. ... It follows that once we have explained how these functions are performed, then we have explained the phenomenon in question. ... The epistemology of reductive explanation meets the metaphysics of supervenience in a straightforward way. A natural phenomenon is reducibly explainable in terms of some low-level properties precisely when it is logically supervenient on those properties. ... What is most important is that if logical supervenience fails ... then any kind of reductive explanation fails, even if we are generous about what counts as an explanation. (pp. 43=50)

Although reductive explanation is not by any means a priori (since the lower-level facts and principles invoked are straightforwardly empirical), there is an aspect of the overall explanation that is relatively a priori, viz., the appeal to what is essential about the higher-level supervenient property – typically (as in Chalmers's examples of learning and reproduction) its definitive functional role. Reductive explanation is a matter of logical supervenience. [G & H, pp. 9-10]

"A reductive explanation of a phenomenon need not require a reduction of that phenomenon, at least in some senses of that ambiguous term"

It's no use saying, as Chalmers (1995) does here, that 'reduction' is an ambiguous term unless you are prepared, as he apparently is not, to specify the different senses involved. One of my unfortunately unpublished 1973-4 Amsterdam Lectures is devoted to this topic [[Place \(1974-10-24\)](#)].

"if logical supervenience fails ... then any kind of reductive explanation fails"

This statement of Chalmers (1995) is about the most outrageously false claim that I have ever come across. Think of the situation as it existed when chemists were first putting forward the hypothesis that it might turn out that all cases of water are composed of two atoms of hydrogen to one of oxygen. At that time it was clearly not self-contradictory to suppose that samples of water might turn out to have a different chemical composition, say the chemical composition XYZ, whatever that is. Yet this lack of "logical supervenience" did not, I assume, prevent the hypothesis that water is always H₂O from providing an excellent explanation of the known properties of water. Chalmers' claim is sheer balderdash, as, of course, is Putnam's (1975) analysis of his Twin Earth example, and Graham and Horgan's claim echoing Chalmers, that "reductive explanation is a matter of logical supervenience"

If qualia are not logically supervenient on underlying physical facts and properties, then serious doubts arise whether qualia play any causal role in generating behavior. After all, in a physical-duplicate world in which a person's physical counterpart has inverted qualia, or lacks qualia altogether, that counterpart-person still behaves (by hypothesis) exactly as the person in the actual world behaves, despite having different qualia, or none at all. This being so, it appears *prima facie* that the phenomenal aspects of one's mental life play no genuine causal role at all with respect to one's behavior; rather, the real causal work seems to be done by properties that we share in common with their physical counterparts in these inverted-qualia and absent qualia physical-duplicate worlds. [G & H, pp. 11-12]

Every philosopher (except John Searle) knows that if two names or descriptions refer to the same thing or to everything of a particular kind, there cannot be a causal relation between the things referred to by the two descriptions. This is because there are two names or descriptions, but only one thing to which those names or descriptions refer; and you cannot have a relation, such as the causal relation, which relates events or states of affairs (*not* their descriptions), unless there are at least two relata. Of course, what you *can* have is a causal relation between two states of or events within the same individual; but that doesn't infringe Hume's principle that causal relations hold between "distinct existences".

But now we are being asked to believe that because it is *conceivable* that two things *might* exist independently of one another, there cannot be a causal relation between them. This is the exact opposite of Hume's principle which holds that if it is *inconceivable* that two things should exist independently, there cannot be a causal relation between them.

A thoroughly satisfying explanation of phenomenal consciousness would be a reductive one in which (i) certain lower-level phenomenon would be explained, (ii) qualia themselves would then be explained as

logically supervenient on these lower-level phenomena, and (iii) qualia would thereby be shown to be causally efficacious. [G & H, p. 12]

I agree, of course, that "A thoroughly satisfying explanation of phenomenal consciousness would be a reductive one"; but Graham and Horgan's description of such an explanation seems to me gratuitously perverse. Such an explanation would explain the properties (the qualia) of the phenomena (phenomenal consciousness) at the higher level in terms of properties and arrangement of the lower-level phenomena (patterns of neural excitation determined in their turn by patterns of synaptic weights). How far the explanation of the pattern of excitation by the pattern of synaptic weights is necessary for an adequate explanation of the qualia themselves as presumably envisaged in Graham and Horgan

"(i) certain lower-level phenomena would be explained,"

is not clear to me. What *is* clear is that in so far as

"(ii) qualia themselves would then be explained as ... supervenient on these lower-level phenomena,"

the supervenience would be what you describe (presumably following Chalmers) as "*nomological* (or *natural*) supervenience" rather than "*logical* (or *conceptual*) supervenience."

As I think I have shown, the logical/conceptual connection only arises once the nomological/causal connection becomes accepted as a matter of established scientific fact. Hence it is perverse in the extreme to claim, as Graham and Horgan do, that

"(iii) qualia would thereby be shown to be causally efficacious"

even if one could explain, in broadly evolutionary terms, why there would have emerged states with the functional-representational roles associated with phenomenal consciousness, the question would remain why these states have the specific phenomenal character they do, rather than other kinds of phenomenal character (e.g., inverted in certain respects relative to the actual world), or none at all. [G & H, p. 12]

Are Graham and Horgan seriously suggesting that if we were able to explain in "broadly evolutionary terms" such things as why pain sensations feel unpleasant, why grass looks green (because it *is* green and *is* green because it contains chlorophyll, and containing chlorophyll is a feature which is important for most organisms, particularly herbivores, to be able to distinguish) or why very low notes are as much felt as heard, there would still be something left unexplained, the qualia themselves? If so, the qualia have degenerated into a philosophical fiction wholly divorced from anything anyone actually experiences, as Donald Gustafson

argued in an excellent paper¹⁴ which he presented at the Sixth Annual Meeting of the European Society for Philosophy and Psychology (Padova, 27-31 August 1997).

In short, selective advantage seems to attach only to the functional-representational roles associated with qualia, rather than with phenomenal content itself. [G & H, p. 13]

In other words, a quale is only a quale if it is a purely functionless epiphenomenon. If that is Graham and Horgan's view, then I can prove that either qualia in this sense do not exist, or if they do, that we have not and never could have any evidence that they do. For a first-hand description of an event requires that the event be the cause of the description. But a functionless epiphenomenon can never cause anything. *ergo* what purports to be a first-hand description of the qualia of an experience can never, on this view, be what it purports to be. Need I say more?

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¹⁴ [Gustafson's paper is probably published as Gustafson, D. (1998). Pain, qualia, and the explanatory gap. *Philosophical Psychology*, 11(3), 371-387.]