CHAPTER 13

Zero-person and the psyche

Graham Harman

This article addresses several closely linked issues: the mind–body problem, the relation between first-person and third-person descriptions, and panpsychism. Every approach to consciousness has its own way of addressing each of these questions, and the lines of battle are now firmly drawn and widely known. But while all three issues should be of great interest to any thinking person, I contend that each marks an artificial restriction on a broader underlying problem.

First, the mind–body problem is one small part of a more basic *body–body* problem, as found in the abandoned occasionalist tradition. On this point I will make two claims: (a) The occasionalist problem of interaction between any two entities has not been overcome, but was merely inverted by Hume and Kant without solving the problem. (b) Natural science also does not solve the problem of body–body interaction, but flourishes only by ignoring it. To hold that bodies interact by slamming together in space or responding to fields is to adopt a narrowly commonsense view of what interaction means. Thus, the inadequacy of materialism arises *not* from its inability to explain a special pampered entity called consciousness, but from its inability to balance its accounts in the physical realm. It ignores the problem of how relations arise between any two beings, and merely treats interaction as successfully calculable. One of its worthy goals in doing so is to draw mental facts back into the same sphere as physical ones, in a Galilean effort to unify the supposedly separate worlds of mind and body. This makes it an appealing alternative to dualism. Unfortunately, materialism leaves the nature of relations between bodies in obscurity. In this sense, it is less a metaphysics than a police action, offering a fairly bleak vision of the harmony that will ensue once the final obscurantist holdouts are crushed. Hence, the position defended in this article can be called 'physicalist' only if the term 'physical' is expanded far beyond the scope of the usual scientific conception of matter.

Second, there is something missing from the picture when we divide the world between first- and third-person descriptions. What is missing is not the second-person, which can easily be dissolved into the third-person, but rather what I will call the *zero-person* stance (the ordinal 'zeroth' is too awkward in English), which refers to the 'essence' or intrinsic nature of an entity apart from any access we might have to it. The problem shared by first- and third-person descriptions is obvious: namely, both

are *descriptions.* Against any ontology in which things are reducible to a listing of attributes, I hold that the being of things is never commensurate with descriptions of any sort. Objects, in a broad sense including trees, protons, animals, cinder blocks, nations, humans, and fictional characters, are never exhausted by any possible manifestation. Hence, objects must be granted a zero-person reality that can only be *translated* into descriptive terms of the first- or third-person kind. Here we have yet another variant of the forgotten occasionalist problem, since human consciousness is stripped of its purported ability to exhaust apples and stars with third-person descriptions, and even of its purported ability to drink its own self dry by means of direct first-person awareness.

Third, there is need to replace the word 'panpsychism' with a more accurate term, even if the initial options are somewhat awkward. The one I will propose here is 'endopsychism,' though I reserve the right to replace it with a more mellifluous one in the future. Franz Brentano presaged the phenomenological movement by reviving the Medieval term 'intentionality,' in the sense of 'immanent objectivity.' All consciousness contains objects within itself as the focus of its acts. Now, Brentano was no panpsychist, and allowed only the usual limited range of entities to have consciousness. But this article contends that there is a universal interplay between: (a) objects in their concealed zero-person reality, and (b) the distorted first-person *or* third-person way in which these objects are encountered. This might seem to lead to a panpsychist version of Brentano, in which *all* objects (not just humans) have an inner psychic life focused on immanent objects.[1] Yet there is a slight problem with calling it panpsychism. I hold that Brentano is right to describe consciousness in terms of immanent objectivity, and also right that all consciousness must be occupied with such immanent objects. But *in what* are the immanent objects contained? Brentano simply assumes that they are contained in me the conscious agent, but this will turn out to be false. Both I the conscious agent and the immanent objects I confront are contained on the interior of a higher object, not on the interior of me. And this slight, strange modification alters the sense of the 'pan-' in panpsychism. 'To be conscious' means *to be in the interior of a larger entity,* but 'to exist' means only *to have an interior*, not to be conscious. In other words, there may be numerous entities that house others without residing in turn on the interior of higher entities, just as water at the surface of the ocean only has neighbors below it, and none above. But if psychism means to exist on the interior of a higher entity, and if there are entities that contain without themselves being contained, then the turbulent 'surface' of the cosmos at any given moment has no psychic life at all, even if all other entities do. In that case, innumerable 'inanimate' objects would turn out to have a primitive psyche, yet we would still fall short of a fully panpsychist vision.

1. David Skrbina, referring to my interpretation of Heidegger in *Tool-Being* (2002) was the first to propose that I should bite the panpsychist bullet: "Harman adds that 'the as-structure of human Dasein turns out to be just a special case of relationality in general. We ourselves are no more and no less perspectival than are rocks, paper, and scissors.' Yet Harman resists casting this interpretation in a panpsychist light. . . . [T]his raises the question of the relationship (if any) between 'psychic relations' and relationality in general." (Skrbina 2005: 181–182).

1. The body–body problem

One of the chief philosophical riddles of modern times is the mind–body problem, most familiar from the writings of René Descartes. How can two substances as different as mind and body ever interact? And how might a physical world of blind causal impact give rise to an apparent inner world of perceptions? While countless solutions have been proposed, there is a more basic opposition between those who accept that there is a mind–body problem in the first place and those who do not. The latter group finds its purest form in the *eliminativist* position, which goes so far as to deny that there is anything like inner experience or a self at all. This position is often described as the denial that there are *qualia*, immediate experiences that would be fundamentally different from the senseless impact of real physical things. It is generally countered by the insistence that experienced qualities are more real than anything else we know, and that such experience is irreducible to the blind interactions described by the sciences.[2] In short, there are those who accept the mind–body problem as a true conundrum, and those who wish to dissolve it by reducing the entire world to a question of bodies. A few scattered visionaries might still try the opposite reduction, turning everything into a kind of mental experience. But in our time they are vastly outnumbered by the legion of scientific materialists, who greatly exceed their rivals in self-confidence and institutional prestige.

Yet all of these groups share the assumption that no *body–body* problem exists. After all, the sciences already work in a body–body idiom, and apparently with great success. Descartes proposed that the realm of *res extensa* functions solely through physical displacement, rejecting the substantial forms and occult qualities of the earlier physics. In this way the superhighway to mechanistic theories of nature was built, and it has handled most serious intellectual traffic ever since. While the quantum theory may add certain complications to the mechanistic view of nature, it does not alter the basic model of physical entities slamming together in space or interacting with fields. There remain certain problems of calculation, of statistical inference, and of deducing the exact laws by which physical entities affect one another. But the basic features of causation are taken for granted, and have assumed an air of self-evidence that makes materialism the default intellectual position of our time. Anyone trying to deviate from this model will feel ceaselessly pulled upon by the claims of scientific mechanism. As a result, philosophy has been forced into a defensive posture: either worshipping the sciences and merely supplying commentary, or upholding the rights of a special inner sphere that the mutual impact of bodies cannot fully explain.

Since Kant, this situation has reached the point that philosophy now deals almost exclusively with the single relational drama between humans and world. It makes no difference whether we see an unbridgeable gap between these two realms (Kant), or

---

2. For a fine example, see Galen Strawson's "Realistic monism: Why physicalism entails panpsychism." (2006; and the present work.)

claim instead that they are fused together from the start (Hegel, phenomenology, pragmatism). Whether the relation between humans and world is an irrevocable divorce or a harmonious marriage, all philosophical energy is focused on this single point of relation. Most will admit that there must be relations between fire and cotton or comets and planets, no less than between humans and world. But these inanimate duels are generally excluded from philosophy's subject matter, unless they are inscribed in some sort of manifestation to humans. Such relations are left to the natural sciences. But if philosophy is to reclaim the universal subject matter that it was born to address, it cannot continue to leave the vast majority of relations outside its mandate. We need to reawaken a body–body problem ignored by the sciences, rather than defend the mind–body problem as the final citadel beleaguered by eliminativists streaming from Mordor.

The body–body problem is not unknown to philosophy, and was most prominent under the now ridiculed name of 'occasionalism.' Cordemoy and Malebranche expanded the Cartesian mind–body problem into a generalized problem of communication between all entities. Similar arguments had long been made in Islamic philosophy, from al-Ash'ari in Basra through al-Ghazali in Baghdad. Their motives were theological, stemming from the apparent blasphemy of granting any causal power to entities other than Allah. Hence, God became the sole medium enabling relations to occur. In today's Western intellectual climate, divine intervention is no longer a defensible explanation of causality; occasionalism has become a dusty footnote to history, mocked as superfluous even by undergraduates. It is sometimes remembered that such figures as Spinoza, Leibniz, and Berkeley also deprived individual entities of direct causal power and made them take detours through God. But this never amounts to anything more than an argument for the "great historical importance" of occasionalism, not for its relevance to us today. And while Spinoza, Leibniz, and Berkeley are still respected, their literal disciples are few. The reason is simple: Hume and Kant have established the horizon for acceptable versions of mainstream philosophy. Anything prior to Hume will usually look like dogmatic metaphysics of the old-fashioned variety.

Yet the occasionalist problem is not only relevant today, it even forms the enduring backbone of modern philosophy. It is little noted that Hume's position is merely an inverted form of occasionalism. The free-thinking Hume admired the writings of the arch-Catholic Malebranche because of their shared objection to the idea that causal relations can be directly observed. What we see are conjunctions and contiguities, not the workings of actual causal powers. Recall that for occasionalists, what was doubted was never the existence of individual substances, but only their ability to come into relation, which required that God be invoked as the global relational medium. But for Hume the situation was merely the opposite: the relations were already present in the form of custom or habit, and what was denied was that real causal powers could be known to exist outside the conjunctions we observe. From here it is a short distance to Kant, for whom cause and effect become human categories that never escape the

bounds of experience.[3] What is common to all these positions is a model in which one special entity does what others cannot: for occasionalism, nothing creates links but God; for Hume and Kant, nothing creates links but human experience. Both groups raise the profound problem of how interaction is possible, but solve it hastily with either a *deus ex machina* or *mens ex machina*. And while it is all too easy for enlightened Western philosophers to chuckle at the notion of a hidden almighty divine cause, they merely defend the socially acceptable underbelly of the problem – letting the human mind serve as an equally almighty universal glue. In both cases, the metaphysics of the world is only allowed to play out in a *single* kind of entity. And while materialism manages to escape this deadlock and regain the full plurality of animate and inanimate relations, this comes at the cost of denying their highly problematic character.

Hume pleads ignorance as to whether there are real causal relations between real things, and Kant pleads even greater ignorance by turning cause and effect into human categories inapplicable to the things-in-themselves. However, today's philosophical mood is not really this sceptical in practice. Our *Zeitgeist* assumes that once we leave the sphere of human reality, interaction between bodies takes place without difficulty, so that the sciences can continue with their successful research projects, unhindered by philosophers. Materialists are granted their point about bodies, and merely denied access (by many) to the mysterious fortress of the mind. And here I must object. Admittedly, the divine solution of occasionalism solves nothing; its best weapon is a mere piety toward forbidden things that now holds little force in a Western context. Nonetheless, I still believe occasionalism is closer to the truth than the various positions inspired by Hume and Kant, in whose shadow all non-materialists continue to dwell. Stranger still, I became convinced of this point by an unlikely figure, one who appears to scorn all metaphysical speculation beyond the bounds of human existence: Martin Heidegger.

In the famous tool-analysis (whose appearance in 1919 predates the publication of *Being and Time* by eight years), Heidegger breaks with his mentor Edmund Husserl.[4] For Husserl, philosophy proceeds by bracketing the existence of any external world and setting up shop in a world of phenomena. I will say more about Husserl's virtues a bit later, but Heidegger's critique hits home. For as Heidegger observes, we do not normally encounter things by staring at them or describing them; this is an artificial special case forming a small portion of our lives. Most of our environment is silently relied upon until it malfunctions. The field of phenomena is a thin film or surface in

---

3. Everyone notes the difficulty that Kant says the noumena "cause" the phenomena even though cause is supposed to be a merely phenomenal category. What is almost never discussed is the question of causal relations *between noumena*. In fact, rejection of this topic is the secret shared assumption of most post-Kantian philosophy. Materialism "solves" the problem only by denying that inanimate entities are noumenal, thereby claiming that everything in the world is phenomenal, describable by qualities observed in the third person.

4. In Chapter One of *Tool-Being* I describe the tool-analysis at great length.

comparison with all those entities whose silent performance we take for granted: bodily organs, chemical structures, habits, linguistic abilities, floors and furniture. Insofar as these things function, they tend to remain unnoticed, withdrawn into shadow. Under the usual reading of the tool-analysis, we have a contrast between explicit theory (Husserl) and implicit practice (Heidegger), with Heidegger's view having the upper hand. This leads W. Teed Rockwell, among others, to identify Heidegger's theory with an earlier insight by John Dewey.[5] More specifically, Rockwell credits both Heidegger and Dewey with seeing that when I use the hammer, the hammer and I are one.[6]

This is a misreading, however widespread it may be. The point of Heidegger's analysis is not that Dasein and the hammer are one, but that they are fundamentally *not* one: their apparent unity is a merely temporary illusion. The reason the hammer can sometimes malfunction is because it is not reducible to Dasein's current use of it, and in fact holds many surprises in store. The point of the tool-analysis is not that praxis is richer than theory: the point is that the hammer itself is richer than both praxis *and* theory. To stare at a hammer is to reduce it to a limited set of surface-properties, but to use the hammer creates a similar caricature of its genuine being. Otherwise, there could be no such thing as a "broken hammer": the hammer would be entirely used up by its relation to practical Dasein. On the contrary, praxis is no better than theory at exhausting the reality of things, and this fact gives the tool-analysis a surprisingly *realist* force. This interpretation might seem at odds with Heidegger's apparently Kantian outlook, in which human Dasein stands at the center of reality, and even Newton's laws are said to be neither true nor untrue before they were formulated by Newton. Yet the realist strand of Heidegger's thinking haunts such anti-realist readings, as seen especially in the 1949 lecture on "The Thing."[7]

But we have not yet gone far enough, and must take an additional step that Heidegger himself never took. If we say that both theory and praxis fail to exhaust the reality of things, this makes it sound as though only human intervention turns things into caricatures, making Dasein a unique instrument of distortion in the cosmos. A human who looks at a rock or uses it to smash other objects would be responsible for converting the rock's reality into a present-at-hand image of this reality, but a rock slamming into another rock would supposedly do no such thing. Yet this view cannot

---

5. W. Teed Rockwell, *Neither Brain Nor Ghost* (2005). On page 189, Rockwell says that Dewey made Heidegger's distinction between readiness-to-hand and presence-at-hand "thirty years earlier." On page 180 he states: "I think it is important to give credit where it is due. It was Dewey, not Heidegger, who first said that the problems of modern epistemology arise from assuming that one can have Dasein without Being-in-the-world, although he said it in less technical language. . ."

6. Rockwell, p. 146. "Insofar as we are at home in the world, and what we encounter is ready-to-hand, we *are* the world."

7. Heidegger, "Einblick in das, was ist," in *Bremer und Freiburger Vorträge*. GA Band 79. (1994; Frankfurt: Vittorio Klostermann).

be maintained. Each of the rocks has countless qualities in its own right; obviously, most of these do not come into play in any given collision. Hence, one rock smashing another will encounter nothing but a distorted rock, a 'straw man' rock, just as would be the case for human theoretical or practical agents. If anything, one rock is likely to reduce the other even more obtusely than would relatively flexible and open-minded human beings. Relations per se are always a *translating* force, always giving us something a bit different from that to which they relate.

The real problem is not the opposition between things and human access to them, as the models of Descartes, Hume, and Kant all suggest. Instead, the problem is the opposition between any two entities at all. The single pampered modern rift between human and world (whether stubbornly retained or heroically bridged) gives way to trillions of rifts between all beings in the cosmos. There is a universal body–body problem, and the mind–body problem is only one of its tiny subsets, though admittedly one of special interest to those who have minds. Heidegger never saw quite this far: even his most realist moment (in 1949) in which a jug stands in itself apart from all human access, usage, science, or production, tells us only that the jug itself hides *from human Dasein*, never from other things.[8] Having scoured the whole of Heidegger's *Gesamtausgabe* as of 2008, I can assure the reader that he never offers a single example of two inanimate things smacking together without Dasein conducting surveillance on them. In this way, Heidegger remains within the Kantian Dual Monarchy of human and world. His assertion that they always come as a pair, via the unified term 'being-in-the-world,' merely mends the rift without replacing it. Human and world are always the two terms that are linked. It is never a matter of 'bridging the gap' between wind and tree, or offering a primal correlation of hailstones and corn. Yet Heidegger could and should have taken this further step. The tool-analysis provides immediate incentive to revive the occasionalist body–body problem, and this time without theological baggage. No relation to a thing can exhaust it, whether it be theory, praxis, or blind causal interaction. No external model of a thing can drain it to the dregs, and this is true not only of our conscious experience, but also of such lowly entities as dust and wheat. But though I propose to revive the problem of occasional causation, I do not wish to revive this precise *term*, which remains too freighted with theological baggage. Hence, I have often suggested 'vicarious causation' as a suitable phrase. Any two entities must interact vicariously, by way of a third. And just as importantly, *any* entity can serve as such an intermediary – not just God or the human mind.

Here, someone might ask how we can know that there are objects above and beyond their phenomenal accessibility. We cannot respond simply by appealing to the authority of Kant, who famously finds it absurd that there could be appearances without anything that appears. This argument by Kant is not highly esteemed by today's readers; indeed, it is often seen as a naïve maneuver subject to easy rebuttal, and marked by the flavor of a dated, traditional style of reasoning. This is how it was viewed

8. Ibid.: 6–9.

by his prestigious successors, the German Idealists. By making the supposed difference between appearance and reality internal to appearance itself, it is easy to produce an idealist philosophy that dispenses with the supposed phantom of the *Ding an sich*. Furthermore, those who do accept something outside appearance can make a different sort of objection: even if a real world is there, why not view it as a single unified lump that is broken into pieces only by mind? This already happens in pre-Socratic philosophy with Parmenides and Anaxagoras. It even happens in more recent cases, such as the lucid treatise *Existence and Existents* by Emmanuel Levinas (2001), whom I regard as Heidegger's greatest interpreter. For Levinas, being itself is a rumbling *il y a* ("there is") without parts, which is then *hypostatized* into parts by the human observer.

Nonetheless, these positions merely disagree as to whether the number of realities-in-themselves is zero (idealism) or one (Parmenides, Levinas). Both agree that there is no plurality of things apart from human access. Despite their obvious differences, both positions claim that *specific* realities are entirely exhausted by their relation to us, with nothing lying in reserve. Hence, they endorse a permanent correlation between human and non-human reality, with neither existing apart from the other. Quentin Meillassoux (2008a) describes all such views with the marvelous term "correlationism."[9] For the correlationist, there is no human without world and no world without human, but only a primal correlation or rapport between the two. In other words, both humans and world are fully deployed in their mutual relationship. As a variant of this position, we could point to a less human-centered version that might be called 'relationism,' as found most lucidly in the works of Alfred North Whitehead and Bruno Latour. Relationist philosophies do not agree that a human must be involved in every relation, but still insist that things are the sum total of their relations to all other things, and nothing more.

This gives us three possible stances against the plurality of hidden things-in-themselves (personified nicely by Fichte, Levinas, and Whitehead). All of these positions all face the same two difficulties. All agree that individual trees are exhausted by being *given* as trees, with Whitehead simply adding the complication that trees are not only given to humans. But let's imagine a counterexample in which other perceivers are added to the situation. New observers now enter the scene and perceive the tree, each in his, her, or its own way. Now, what these observers will be perceiving in each case is *the tree*, not the earlier observers' *perceptions* of the tree. This counterfactual case gives a first reason why a thing cannot be exhausted by the current perceptions or prehensions that other things have of it. The second reason has to do with change. If all entities in the world were fully determined by their current relations with everything else, their reality would already be fully deployed. There would be no principle of dynamism in the world if nothing in the things were withheld from current expression, no surplus of reality outside all current states of affairs. For this reason Merleau-Ponty

9. Meillassoux (2008a). However, Meillassoux does not *reject* correlationism so much as attempt to radicalize it into an absolute knowledge that the laws of nature must be contingent. See his remarks on this point from pages 408–435 of *Collapse* III (2007; Falmouth, UK: Urbanomic).

(1945/2002:79) misses the point when he states, with a false revolutionary air, that a house is not a house viewed from nowhere but a house viewed from *everywhere*. On the contrary, a house is simply not a set of outer perspectives on it by other things, no matter how many such perspectives we might tally up.

This brings us to the sole feasible alternative: the world is home to a vast number of objects, and there is a communication problem between all of them, since all partly withdraw from their manifestations to other things. Instead of the lonely, pampered mind–body problem with its special elitist features, we now have a universal body–body problem between all entities. The body–body problem trumps the Hume-Kant view by stripping monopoly rights from the human-world gap and introducing a global rift between all things. It trumps materialism by insisting that there really is a communication problem between entities. It trumps the standard occasionalist view by saying that God is not a sufficient answer, since God ought to have the same relational problems as every other entity does. It even trumps today's chic philosophies of 'the virtual' by denying that individuals exist only at the surface of the world, and by rejecting the shell game of claiming both that the virtual is pre-individual *and* that it is made up of different pre-individuated zones. This really amounts to saying "the virtual is both one and many, and hence there is no communication problem." But this merely posits a solution by fiat, while solving nothing.

To summarize, I recommend a fresh embrace of the body–body problem, of the view that objects have individual character (a.k.a., 'substantial forms') prior to any relations. All objects must solve the communication problem in precisely the same way, with no special diplomatic immunity for God or the human mind. As a consequence, we no longer need to defend the lonely stockade of the *cogito* against the materialist Golden Horde, since the materialists do not even get bodies right.

2. First-person, third-person, and zero-person

The mind–body problem is often equated with the need to reconcile first-person and third-person descriptions. The difficulty is that first- and third-person descriptions are both *descriptions*, and a body is no more a sum of descriptions than a mind is. A body exists. It cannot be exhausted by the sum total of things we say about it, because these statements would not be able to step in for the thing and do what it does, or be what it is. Nor can a body be exhausted by any set of relations, no matter how large. For this reason I will coin the adjective 'zero-person' to refer to the reality of any entity apart from its interactions with other entities of any kind. This changes the nature of the problem. Instead of trying to bridge the gap between two kinds of descriptions, we now have a gap between description and reality.

Note that the first- and third-person standpoints are essentially the same thing. There are no third-person views without some entity doing the viewing; conversely, it is unthinkable that there could be a pure stream of first-person experience without something dancing before us in the third person, even if it were nothing but imagined

sparks of light, or vague and rambling urges. A body is never equivalent to what can be said or noticed of it in the third person, nor is mind the same as what is noticed of it in the first person: both mind and body occupy the zero-person stance, quite apart from any experience of them. The gap that needs to be explained lies not between an external third-person and an internal first-person experience, but between the reality of mind or body, and the access to them by whatever might encounter them.

Now, a possible synonym for 'zero-person' would be *essence*. While essence is viewed with suspicion in much recent philosophy, there is nothing mystical or naively traditional about it. Something has an essence simply because it is what it is. To describe a thing's essence seems possible to some extent, but no set of descriptions will be able to replace it. For instance, a perfect list of all the properties of a house, and of all possible relations that other entities might have with it, do not yet add up to a house. Georg Cantor's insights into transfinite numbers even suggest that we cannot have a total set of all properties of the house, which strengthens the hand of the zero-person stance all the more. Nor is the house reducible to its potential to affect other entities: a thing may be known or detected through its causal power over other things, but is not identical with those powers. This immediately revives the classical problem of which things really have an essence, and which are mere aggregates of smaller real things – a problem that cannot be solved in the present article, though I will address it briefly below.

Obviously enough, most approaches to consciousness do not make use of the global duality I have proposed between zero-person reality and descriptions of whatever sort. They overlook this theme thanks to assumptions that can easily be refuted, and by paying attention to themes (such as first-person vs. third-person) that ought to be repackaged in more fundamental terms. As an example of some of these problems, I propose to examine some of the basic theses found in one widely known work in the field: *The Conscious Mind* (1996), by David Chalmers. Regardless of the reader's views on Chalmers, he provides a useful foil for the zero-person stance, since his ontology is not only quite different from the kind I propose, but also makes a strikingly close approach to the universal opposition between objects and relations that I wish to defend.

The core of his argument can be found in his distinction between "logical supervenience" and "natural supervenience." For Chalmers, almost everything is logically supervenient on the physical (p. 71). For a higher-level fact to supervene logically on a lower-level one means that there is really nothing more to it than was already included in the lower level.

> In general, when B-properties supervene logically on A-properties, we can say that the A-facts *entail* the B-facts, where one fact entails another if it is logically impossible for the first to hold without the second. . .. In a sense, when logical supervenience holds, *all there is* to the B-facts being as they are is that the A-facts are as they are. (p. 36)

Logical supervenience goes hand-in-hand with reducibility:

> [F]or almost every natural phenomenon above the level of microscopic physics, there seems in principle to exist a *reductive explanation*, that is an explanation wholly in terms of simpler entities. In these cases, when we give an appropriate account of lower-level processes, an explanation of the higher-level processes falls out. (p. 42)

He does add a caveat:

> [But] a reductive explanation of a phenomenon need not require a *reduction* of that phenomenon. . .. In a certain sense, phenomena that can be realized in many different physical substrates – learning, for example – might not be reducible in that we cannot *identify* learning with any specific 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. (p. 43)

This proviso turns out to be irrelevant for us, since for Chalmers learning has a purely "functional" sense. While the different possible physical substrates of learning make it impossible to *identify* learning with specific lower-level constituents, learning can still be reduced in the other direction. Namely, many different substrates of "learning" can amount to the same thing because of their similar effects. Chalmers holds that *almost everything* in the world can be reductively explained. He cites the example of biological phenomena such as reproduction, adaptation, and even life itself. "Once we have told the lower-level story in enough detail, any sense of fundamental mystery goes away: the phenomena that needed to be explained have been explained." (p. 42). And "a reductive explanation is a *mystery-removing* explanation" (p. 48) that turns a mystery into a mere *puzzle*.[10] Chalmers does concede that a reductive explanation is not always illuminating: to reduce the great 2004 tsunami to molecular motions is possible in principle, but would not be pitched at the right level to be very helpful.

But for Chalmers, consciousness is a special case. It is not reducible as physical phenomena generally are, and this makes it a rare and genuine mystery: "the existence of conscious experience seems to be a *new* feature. . .. It is not something that one would have predicted from [the lower-level features] alone." (p. 4). And "if logical supervenience fails (as I will argue it does for consciousness), then *any* kind of reductive explanation fails, even if we are very generous about what counts as explanation." (p. 50). Yet along with logical supervenience, there is also *natural* supervenience. For instance,

---

10. Ibid.: 24. Chalmers's use of the word 'puzzle' immediately brings to mind Thomas Kuhn's famous idea of puzzle-solving "normal science" in *The Structure of Scientific Revolutions*. But the difference between their respective views of 'puzzles' is itself illuminating. For Kuhn, puzzle-solving science is opposed to paradigm-shifting scientific revolutions, so that puzzles can give way to paradigm shifts at any time and in any subject matter. For Chalmers, by contrast, puzzle-solving has permanent methodological rights over almost the whole of the cosmos, with only a few fixed areas (consciousness, or causal laws) retaining a certain autonomy and mystery. It should be obvious that Kuhn's vision of science is more dynamic than that of Chalmers.

> [T]he pressure exerted by one mole of a gas systematically depends on its temperature and volume according to the law $pV=KT$, where K is a constant. . . [However,] this supervenience is weaker than logical supervenience. It is *logically* possible that a mole of gas with a given temperature and volume might have a different pressure; imagine a world in which the gas constant K is larger or smaller, for example. Rather, it is just a fact about *nature* that there is this correlation. (p. 36)

Borrowing an image from Saul Kripke, Chalmers (p. 40) quips that once God created the universe with its microphysical facts, all the logically supervenient facts came automatically as a free lunch, but that God had further work to do to create naturally supervenient (and hence "mysterious") facts such as consciousness and causal laws.

When Chalmers says that almost everything in the universe is logically supervenient on the physical, he means that almost everything can be reduced to either its "structural" or its "functional" properties. For him, a mid-sized object such as a table has no autonomous reality, but only a structure and a function. In structural terms, a table needs to "have a flat top and be supported by legs." But such terms as 'flat top' and 'legs' are obviously rather crude, parochial examples of structure. A flat top is flat only for entities of a relatively large size, while bacteria encounter the tabletop as a landscape cratered with pores. Most of our loose examples of "structural" properties turn out to be purely functional. Hence, when Chalmers says that "structural properties are clearly entailed by microphysical facts," what he means is that microphysical facts are the only real structure the physical world has. In other words, the ultimate structure of a thing comes from the basic particles of which it is composed. This claim is more perplexing than it might seem. After all, Chalmers has no better idea than the rest of us what these fundamental particles might be (fifty-year-old quarks and century-old electrons are merely the limit of current physics), nor does he give any reason for holding that such ultimates must exist in the first place. Elsewhere in the book, Chalmers is openly critical of those who hope to explain consciousness through the possible future achievements of physics, yet he shows the same faith in physics here, reducing almost everything to functions, other than the "microphysical" structural facts in which he straightforwardly believes.

In functional terms, the fact that something is a table means that people use it to support various objects. For Chalmers as for most others, the functional means the *relational*; the ability of the table to support objects, just like its flat surface and possession of legs, is something real only for the other beings that encounter it. Objects pass the buck of reality down to their tiniest microcomponents; the table has no features in its own right *qua* table, but is merely a functional figment produced from the outside. Its structure comes from beneath (basic particles), and its function comes from above (those who use it). The table is thus reducible in two separate directions, and once this happens there nothing is left. Other than a few briefly described exceptions that need not concern us here (such as "indexicality"), Chalmers ends up with a rather sparse ontology: "almost every phenomenon is reductively explainable [i.e., expressible in terms of structure or function]. . .. except for conscious experience. . .. along with the

rock-bottom microphysical facts and laws, which have to be taken as fundamental."[11] Generally speaking, he holds that everything real is either a physical particle or law (both describable in the third-person), or it is conscious experience (describable only by first-person qualitative "feels"). Although he later ascribes consciousness to such offbeat entities as a thermostat, this merely widens the number of beings permitted to have mind, and does nothing to expand Chalmers's basic roster of ontological personae. Other than particles, laws, and consciousness, nothing has reality in its own right. My claim, by contrast, is that the cosmos is riddled with autonomous entities at every level, and that they are reducible neither to microphysical structure nor to functional/relational use.

But Chalmers anticipates my objection:

> A frequent response is that conscious experience is not alone. . .. and that all sorts of properties fail to supervene logically on the physical. It is suggested that such diverse properties as tablehood, life, and economic prosperity have no *logical* relationship to facts about atoms, electromagnetic fields, and so on. (p. 71)

He responds as follows:

> [O]n a careful analysis, I think it is not hard to see that this is wrong, and that the high-level facts in question are. . .. logically supervenient on the physical insofar as they are facts at all. Conscious experience is almost unique in its failure to supervene logically. (ibid.)

Chalmers concludes that "the relationship between consciousness and physical facts is different *in kind* from the standard relationship between high-level and low-level facts." (emphasis added). His ten-page analysis of the issue hinges entirely on a point already discussed: "most high-level concepts are not primitive, unanalyzable notions. . .. [insofar as] their intensions can be seen to specify *functional* or *structural* properties." (p. 81; emphasis added).

Two names that Chalmers uses to describe his own position are "naturalistic dualism" and "nonreductive functionalism." These phrases mean the same thing. Naturalistic dualism is dualistic because it does not allow consciousness to be reduced to the physical, but at the same time it is "naturalistic because it posits that everything is a consequence of a network of basic properties and laws, and because it is compatible with all the results of contemporary science." (p. 128). Nonreductive functionalism likewise points to the dual sense of a consciousness that arises from the physical while still being something fundamentally new. Chalmers's brand of functionalism denies "that the playing of some functional role is all there is to consciousness, or all there is to be explained. Rather, it is a nonreductive account, one that gives functional criteria *for*

---

11. Ibid.: 88. Since Chalmers holds that consciousness and causal laws are the only two genuine realities in the cosmos aside from brute basic particles, he muses further that "it is not unnatural to speculate that these two [logically] nonsupervenient kinds, consciousness and causation, may have a close metaphysical relation" (p. 86). This has consequences that will concern us a bit later.

when consciousness arises." (p. 229; emphasis modified). Standard reductive functionalism holds that something is conscious when it *behaves* in conscious terms, displaying all the outward symptoms and effects that one expects of a conscious being, and for reductive functionalism there is nothing more to be explained than this. But this runs afoul of Chalmers's favored thought-experiment of the *zombie*: a being in another universe identical to me in all physical and behavioral respects, but lacking any conscious experience. (pp. 94–99). Reductive functionalism effectively treats us as zombies reducible to our outward functions. By contrast, Chalmers holds that consciousness is different from all its outward manifestations, though without being independent of the physical conditions through which it arises. It is dependent on the physical ("naturally supervenient"), without being reducible to it ("logically supervenient").

In the course of developing this position, Chalmers argues against numerous opposing views. But there are two alternative positions that he treats with an especial degree of respect. One is panpsychism: "we ought to take the possibility of some sort of panpsychism seriously: there seem to be no knockdown arguments against the view. . ." (p. 299). His relationship with panpsychism, as for so many of us, is a sort of unconsummated flirtation, though Chalmers is more open to consummation than most. Yet even if he were to accept panpsychism, it would not threaten his dualism, since it would merely allow thermostats and other strange entities to join humans, monkeys, and dolphins on the roster of conscious beings. While this would be no small gamble in the current intellectual climate, the basic dualist picture would remain. Hence, the more threatening rival that shadows Chalmers is a speculative metaphysics of hidden protophenomenal essences. That is to say, dualism might be challenged with the following point:

> [T]o claim that the zombie world is *physically identical* to ours is to misdescribe it. . .. [Namely,] the zombie world *seems* physically identical [despite] being physically different. . .. there are properties essential to the physical constitution of the world that are not accessible to physical investigation. (pp. 134–135)

Chalmers notes that this latter position echoes the neutral monist views of Bertrand Russell in *The Analysis of Matter* (1927), which Chalmers (p. 153) glosses as saying that "physical theory only characterizes its basic entities *relationally*, in terms of their causal and other relations to entities. [Even] basic particles. . .. are largely characterized in terms of their propensity to interact with other particles." For instance,

> reference to the proton is fixed as the thing that causes interactions of a certain kind, that combines in certain ways with other entities, and so on; but what is the thing doing the causing and the relating? As Russell notes, *this is a matter about which physical theory is silent*. (ibid.)

While Chalmers (p. 136) is correct that this position would still be much closer to dualism than to materialism, it would completely change the terms of the duality. Instead of a difference between first-person qualitative feels and third-person descriptions of physical matter, there would be a difference between nonrelational protophenomena and their relational manifestations. Both first-person and third-person descriptions

would have to fall on the latter side of such a rift, since we do not exhaust our own reality in introspection any more than a proton is exhausted by our description of it, or even by its interactions with other particles when no one is looking. We also need to ask why only tiny particles should be granted a cryptic protophenomenal reality, rather than extending this gift to bulkier objects as well. Why should *physical* structure always be reducible to its microphysical basis, as Chalmers assumes?

A bit more can be said about this. What Chalmers envisions is a theory of consciousness that will give us "psychophysical laws" irreducible to more basic physical ones. These laws will have a certain "brute" aspect that describes the workings of any sort of mind in our universe. If this bruteness of the psychophysical realm sounds disappointing, Chalmers reminds us that it is no different with

> the theories that physics gives us of matter, of motion, or of space and time. Physical theories do not derive the existence of these features from anything more basic, but they still give us substantial, detailed accounts of these features and of how they interrelate. . .. They do this by giving a simple, powerful set of *laws* involving the various features. . .. (p. 213)

More generally, "in science, we never get something for nothing: something, somewhere, must always be taken for granted. . .. So be it. That is the price of constructing a theory." What is interesting here is the claim that we are left with nothing to talk about but *laws*. Laws express relations between entities. Notice that for Chalmers there could be no such thing as "laws of tables," since these could be re-expressed either as structural accounts of how a table is an aggregate built up out of miniature physical particles, or functional laws of how the table can be used by people and cats. This would not be the case for such realities as consciousness, matter, motion, space, and time. These must be taken for granted because they are real entities, "part of the basic furniture of the universe," unlike non-basic furniture such as wooden or plastic tables.

One point of tension is as follows: while Chalmers usually regards only physical particles, consciousness, and laws as basic furniture, there are two occasions when he uses James Clerk Maxwell's discoveries as analogies for the absolute novelty of consciousness. Chalmers recounts that after numerous failed attempts to explain electromagnetic phenomena in traditional mechanical terms,

> features such as *electromagnetic charge and electromagnetic forces* had to be taken as fundamental, and Maxwell introduced new fundamental electromagnetic laws. . .. *In the same way*, to explain consciousness, the features and laws of physical theory are not enough. (p. 127; emphasis added)

The oddity here is that electromagnetic charge and force are admitted as new sorts of objects with the same degree of surprising novelty as consciousness itself, irreducible to more basic physical mechanisms. To me at least, this seems to open the floodgates and allow for novel objects on countless different layers of the universe. Chemistry and geology also have brute laws pertaining to the sorts of entities with which these sciences are concerned – laws that "could not have been predicted" just by knowing all the facts about quarks and electrons. Chalmers would probably counter that chemical

and geological entities can still be reduced, in principle, to lower-level physical explanations based on microparticles. But the problem here is that electromagnetism can itself be reduced to an "electroweak" force, following the Nobel Prize-winning work of Glashow, Salam, and Weinberg. Pushing even further, some future theory may well unify the electroweak and the strong nuclear force with gravity, as expressions of an even more fundamental layer of reality. Pressing even further, the philosopher Kasimir Twardowski imagined a general metaphysics of objects to which both material and imaginary objects could be reduced. Hence, it is unclear why Maxwell's electromagnetic realities receive a special status not granted to other non-basic, non-mechanical entities.

My purpose is not to attack Chalmers's understanding of science, which is apparently solid throughout the book. Rather, I simply wonder why he conflates 'autonomous' with 'physically fundamental.' Gravity remains a relatively brute fact in our own time, and is also an autonomous subject matter with its own laws and its own basic entities (masses, and since Einstein curvatures of space-time as well). But the brutality and the autonomy of gravity *are not the same thing*, since the former would disappear with a future scientific revolution, while the latter may or may not disappear in such a case. Geology would not be considered a 'brute' realm for Chalmers any more than a table, since both would be reducible to a tinier microphysics – yet both geology and the world of tables have their own autonomous entities and laws, even if larger-scale ones than nuclear physics. And though Chalmers is committed to the dubious idea that a given subject matter must be "fundamental" in order to be filled with its own autonomous personae, he makes a bad gamble by citing such examples of "fundamental" realities as mass, space, time, force, and charge. Quite obviously, the fundamental character of these realities is as open to further reduction and unification as the formerly basic proton was once we learned it was made of quarks. Demanding that a thing be "rock-bottom" in order to be real is too heavy a price for any ontology to pay. The world of Chalmers is disturbingly devoid of layers, giving us a physical model in which everything of greater than microscopic size is dismissed as a crude functional metaphor. This eventually creates severe problems for his version of dualism.

But let's return to the theme of nonreductive functionalism, where all these issues come to a head. Despite his objections to materialism, Chalmers remains committed to naturalism: consciousness may be mysterious, but it is not a spooky property that comes from nowhere, entirely unrelated to matter. And neither does it arise from some currently unknown *physical* X-factor. Rather,

> a natural suggestion is that consciousness arises in virtue of the *functional organization* of the brain. On this view, the chemical and indeed the quantum substrate of the brain is irrelevant to the production of consciousness. What counts is the brain's *abstract causal organization*. . . (p. 247; emphasis added)

Since the specific physical substrate of consciousness is irrelevant, all kinds of strange media might give rise to consciousness if their abstract causal organization were of the right kind. Among other things, this leads Chalmers to defend strong artificial

intelligence, which might come as a surprise given his public image as a holistic, anti-materialist bohemian. Without a trace of irony, Chalmers (p. 251) openly holds that "the organization of our brain might be simulated by the people of China," with every Chinese citizen using radio links to mimic the functioning of neurons. If it sounds bizarre that such a rickety arrangement might lead to consciousness, Chalmers counters that "it is equally intuitively implausible that a *brain* should give rise to experience!" He faintly implies that Searle's famous "Chinese Room" might be conscious (p. 314), and openly entertains the notion that a thermostat might be, though he admits it would probably not be capable of thought or self-consciousness. (pp. 293–297).

This model bears directly on both of the neighboring theses that stalk Chalmers through his book: (a) panpsychism, and (b) the metaphysics of hidden essences. This becomes especially clear in his idea of consciousness as an information-processing system. Borrowing Bateson's slogan that "information is a difference that makes a difference" (p. 281), Chalmers gives an intriguing account of information as *abstraction*. When light strikes our eyes and activates cells in the retina,

> three varieties of cones abstract out information according to the amount of light present in various overlapping wavelength ranges. Immediately, many distinctions present in the original light wave are lost. . .. The system cannot report 'This patch is saturated with 500- to 600-nanometer reflections,' as all access to the original wavelengths is gone. Similarly, it cannot report about the neural structure, 'There's a 50-hertz spiking frequency now,' as it has no direct access to neural structures. The system has access only to the location in information space. (pp. 289–290)

This leads to an interesting conclusion: "it is information that plays the key role. It is *because the system has access only to information states* that the various judgments of brute 'qualities' are formed." (p. 292; emphasis added). Information is described as having a "double aspect," since both phenomenal and physical realities can be seen in informational terms. This is true not only for the phenomenal realm of vision and other such abstractions. It is also true in the physical realm, thanks to Chalmers's interpretation of Claude Shannon as saying that "information is always a *transmittable* state." (p. 282; emphasis added). While he admits that this principle is merely implicit in Shannon's work, it seems convincing enough that transmitted information about physical states will always amount to a *translation*, and that translation is always a kind of abstraction or distortion. Hence, both the physical and phenomenal realms can be described in informational terms, and this obviously suggests a powerful means of linking them.

In fact, "we find information everywhere we find causation. We find causation everywhere, so we find information everywhere. But surely we do not find experience everywhere?" (p. 293). We now arrive at Chalmers's well-known panpsychist moment. Though he considers the possibility that only certain *kinds* of information might yield experience, this sounds like an artificial shield against panpsychism, and Chalmers does not shy away from entertaining a more dramatic option. Since information is

ubiquitous, it may follow that "experience is ubiquitous too." Among the many virtues of panpsychism, one is that

> if experience is truly a fundamental property, it seems natural for it to be widespread. . . . It would be odd for a fundamental property to be instantiated for the first time only relatively late in the history of the universe, and even then only in occasional complex systems. (p. 297)

Perhaps the most worrisome problem with panpsychism, for Chalmers, is what is often termed "the combination problem." In his own words,

> the central reason why the term [panpsychism] is misleading. . .. is that it suggests a view in which the experiences in simple systems such as atoms are fundamental, and in which complex experiences are somehow the sum of much simpler experiences. [And] while this is one way things could go. . .. complex experiences may be more autonomous than this suggests. (p. 299)

It is interesting to note that Chalmers (along with most panpsychists) is not worried about any combination problem in the *physical* realm. He never finds it troubling that complex physical objects could somehow be the sum of much simpler ones, since he actually believes that macro-entities such as tables do not really exist except as a crude sort of functional identity for those who encounter them. The combination problem supposedly arises only in the realm of consciousness, and "the *informational* view suggests a picture on which complex experiences are determined more holistically than this." Let's return, then, to the informational view.

Chalmers warns us (p. 302) that he is now venturing into "speculative metaphysics, but [this] is probably unavoidable in coming to terms with the ontology of consciousness." The metaphysics in question resembles Russell's neutral monist view that both the mental and the physical arise from a more fundamental reality. After all, "physics tells us nothing about what mass *is*, or what charge *is*: it simply tells us the range of different values that these features can take on, and it tells us their effects on other features." For the purposes of science, "specific states of mass or charge might as well be pure information states. . ." Chalmers spends two pages entertaining the possibility that information is the *only* thing that exists – a pure informational flux without anything concealed behind it. Yet he finally concludes (pp. 303–304) that this picture does justice neither to bodies nor to phenomenal experience. For there is a certain "intrinsic" character to experience, which does not immediately pass into further abstract information for some further purpose; it is simply *there*, absorbing our attention. And as for the physical realm, a model of pure information with nothing behind it might give the impression that "[such a] world is too lacking in substance to *be* a world. . .. one might find it plausible [instead] that every concrete difference in the world must be grounded: that is, that it must be a difference *in* something."

And this is where Chalmers feels close to Russell. If the informational model falls short of the intrinsic character of both phenomena *and* bodies, then perhaps some hidden intrinsic X can unify the dualism of Chalmers's model. Yet his own take on the problem tends to privilege the phenomenal side, about whose intrinsic quality he

is much more convinced; his vague hunch that the physical realm might have some intrinsic character is overshadowed by his utter certainty that this is true of phenomenal experience. This leads him to suspect that everything in the world comes down to what is *phenomenally* intrinsic. As Chalmers (p. 305) sums up his proposal, "every time a feature such as mass and charge is realized, there is an intrinsic property behind it: a phenomenal or protophenomenal property, or a *microphenomenal* property for short." This gives him a double-aspect ontology, "or as a slogan: Experience is information from the inside; physics is information from the outside."

His worry about this model, yet again, is the so-called combination problem. For "our conscious experience does not seem to be any sort of sum of microphenomenal properties corresponding to the fundamental features in our brain. . .. Our experience seems much more holistic than that, and much more homogeneous than any simple sum would be." (p. 306). One approach to this problem, he admits, would be to expand the double-aspect ontology from the level of basic particles into the macroscopic sphere. But here Chalmers runs aground on his old prejudice: his disbelief in macroscopic *physical* entities that would be irreducible to basic particles. The problem, as he sees it, is that

> once we have fundamental physical features realized in phenomenal information spaces, then macroscopic information seems to be grounded already: the differences that make a difference here are now grounded in microscopic physical features, which are themselves grounded in microphenomenology.

In short, there is no room in Chalmers's ontology for intermediate physical objects. In physical terms there are only microparticles, while in mental terms there are both tiny and large minds, with a nagging difficulty in linking these two sizes of mind together. Chalmers is perfectly happy to view a table as nothing but a swarm of tiny particles, but finds it harder to picture our consciousness as a swarm of tiny minds.

Yet the problem of how to build macro-minds out of tiny minds is not even Chalmers's greatest concern. What he seems to fear most is the classic difficulty of mind becoming a useless epiphenomenon – a frivolous film on the surface of a causally closed universe. Earlier in the book (p. 165), he admitted briefly that "the biggest worry about [my] view is that it implies a certain irrelevance of phenomenal properties in explaining behavior, and may lead to epiphenomenalism. . ." And even earlier,

> if consciousness is merely naturally supervenient on the physical, then it seems to lack causal efficacy. . .. This implies that there is no room for a nonphysical consciousness to do any independent causal work. It seems to be a mere epiphenomenon hanging off the engine of physical causation, but making no difference in the physical world. (p. 150)

This problem will be considered below.

To summarize, the two main problems that Chalmers acknowledges with his model are the combination problem and epiphenomenalism. The major problem he fails to acknowledge is his strangely asymmetrical treatment of body and mind, which grants no macroscopic-sized entities in the physical case but is plagued with an odd

tension between tiny- and large-sized minds. There is also the perplexing issue of why Chalmers is fixated on the difference between bodies and minds at all. If the entities of physics are described in purely informational terms, and if phenomenal experience is also filled with nothing but abstract information, then it seems fairly clear that Chalmers is discussing the wrong dualism. He should drop the idea that there are two basic classes called bodies and minds, and replace it with a dualism of *intrinsic realities* and *the information transmitted about them*. Objects would be zero-person intrinsic realities that simply go about being whatever they are, prior to any informational abstraction by other entities. But for objects to become *accessible* to other objects means that they must be reduced to abstractions, translated into informational holograms that do not do full justice to their reality. And this is all the dualism we need. Minds and bodies are both objects, not two fundamentally different pieces of furniture in the universe. An electron both is it what it is, and is also information making a difference to other realities, though in pitifully abstracted form. The same is true of a conscious mind: I am what I am, but all introspection comes up woefully short of exhausting what it is to be me. In a sense, eliminativists are right when they argue that first-person description is no different from the third-person kind.[12] Both are descriptions, and hence both are purely informational. My consciousness is not equivalent to my first-person "feel" of it, because my self-understanding is never adequate at any given moment.

3. Combination and epiphenomenon

The reason I have spent so much time on Chalmers is because his mistakes strike so close to the truth. Already, I have argued that his traditional distinction between bodies and minds needs to be replaced by one between objects and relations; furthermore, I have contended that he is wrong to reduce macroscopic *bodies* to lower-level structures and higher-level functions, since consciousness is not unique in being irreducible to its component parts.

Chalmers portrays himself as a former materialist who was finally forced to admit that consciousness must be irreducible to matter. Yet the most striking point is that even though Chalmers is no longer a materialist about consciousness, he remains a materialist about everything else. Now, the main problem with materialism was cited by Chalmers himself: it is a purely *relationist* model of the world. As Russell observed, scientific matter is defined only by its relational effects on other things, never in its own right. But since these effects are always measurable in mathematical terms, this makes materialism a form of *idealism*, not of realism.[13] And though Chalmers might seem

12. See, for instance, page 97 of Paul Churchland's lucid early work *Scientific Realism and the Plasticity of Mind* (1979; Cambridge University Press).

13. See Bruno Latour, "Can we get our materialism back, please?" *Isis*, 2007, 98: 138–142.

like a hardnosed realist, given his loyalty to the supposed microparticles of physics, he is an idealist about all physical things larger than that. Chalmersian physics exists only at the micro-level, while Chalmersian consciousness exists both at the micro-level of basic particles and (somehow) at the macro-level of complex living beings. For him it is largely a matter of adding conscious tiny particles to the known list of conscious humans, dogs, and mice, with nothing in between. This makes his proposal of conscious thermostats especially refreshing, since it begins to populate the intermediate zone of the world for the first time in the book. However, if every conscious state is associated with a physical state, this immediately suggests that the *physical* thermostat should also be a real entity over and above the quarks of which it is made, just as the *conscious* thermostat is something over and above its microphenomenal components. Yet Chalmers's instinctive materialism in physical questions prevents him from taking this step.

We must proceed further into speculative metaphysics than Chalmers himself. Recall his proposed final slogan: "Experience is information from the inside; physics is information from the outside." The difficulty lies in seeing how there could be any such thing as information from the *inside*. Chalmers extends Shannon's theory to say that all perceptual and physical information is an abstraction from some more complicated reality, filtering out all access to 50-hertz spiking frequencies and other causal entities. In this respect, both experience and physics are concerned with *outside* views on information. Therefore, I ask: why preserve the dualism between experience and bodies? Why not just unify them as forms of information straightaway? The reason stems from Chalmers's lingering sense that only phenomenal experience is intrinsic. Since he holds that the physical is always reducible, but the phenomenal never is, the phenomenal must count as something intrinsically real. Even physical microparticles turn out to be purely relational for Chalmers, due to Russell's point about the purely relational character of the physical. Thus, the only way for Chalmers to prevent the reduction of the world to a sheer causal flux, the only way to give it some sort of intrinsic reality, is to double up relational microparticles with intrinsically real microminds. But whatever the gains of such a model, it is certainly not neutral monism. Instead, it is a dualism of two *types* of entity, with minds playing the intrinsic role and bodies the relational role.

But if any genuine dualism arises from Chalmers's reflections, it lies between information and whatever it informs us about. Phenomenal experience can only be called 'intrinsic' on the basis of an ambiguity. To begin with, I will agree with Chalmers against eliminativism that phenomenal experience is a brute *factum*: here it is, I am having such experience. But introspection can never grasp this experience as a whole. Introspection, just like the relational descriptions of physics, gives us information viewed from without – it is a more or less noisy translation of whatever this information is *about*. Consciousness is intrinsic not because it is *experienced*, but because it *is*, and my experience of myself can only be an informational abstraction no less than physics is. Moreover, in this sense even bodies are intrinsic: no list of features of an electron can replace that electron, and this means that the electron too is an intrinsic,

autonomous object. We do not need to add a micro-mind to the electron *just for the sake of making the electron intrinsic*; if there are grounds for panpsychism, they are not to be found here. This means once again that the difference between first-person and third-person is superficial, even nonexistent. Electrons exceed my information about them, and my conscious reality exceeds my own informational 'feels' about it. The key opposition is not between mind and body, but between objects and relations, as the occasionalists already knew. The difference is not between first-person and third-person, but between zero-person and any-other-person.

But it is not only we humans who encounter other entities as information; the same holds for non-human entities in their encounters with each other. In terms of Russell's remark, it is not just that *science* only gives us protons and electrons in relational terms, but that protons and electrons only encounter *each other* that way as well. It is not just human consciousness that translates reality into information; relationality in general must do this. This is the true root for any form of panpsychism. You and I encounter nothing but information, and so do protons, electrons, candles, and dogs. It does not follow from this that all of these entities are *nothing but* information, since this would eliminate any intrinsic features from the cosmos, and Chalmers is right to see problems with such attempts. Protons and electrons are intrinsically *objects*, irreducible to any causal information they might generate, and so are human beings. Shifting terminology slightly, the real dualism in question is one between objects and images. Objects are real, but withdraw permanently from any adequate relational access, just as in the occasionalist model. And given that real objects withdraw from interaction, it cannot be real objects that interact. They only interact *vicariously* in some shared medium where they are somehow able to meet. It should be clear by now that this shared vicarious medium of objects must be purely informational, since information is the only common currency that all objects share. Objects collide only indirectly, by means of the images they present as information. Yet there must be some way for this to lead to effects on real objects themselves, or else causal relations would never occur.

An obvious question is where information is located. Strangely enough, the only possible answer is that images of objects are found *on the interiors of other objects*. As bizarre as this might sound, it is already the basic principle of Brentano, the forefather of phenomenology. Brentano's discussion of the difference between the mental and the physical is well-known:

> Every mental phenomenon is characterized by what the Scholastics of the Middle Ages called the intentional (or mental) inexistence of an object. . .. or immanent objectivity. Every mental phenomenon includes something as object within itself, although they do not all do so in the same way. In presentation something is presented, in judgment something is affirmed or denied, in love loved, in hate hated, in desire desired and so on.
>
> This intentional in-existence is characteristic exclusively of mental phenomena. No physical phenomenon exhibits anything like it. We can, therefore, define men-

> tal phenomena by saying that they are those phenomena which contain an object intentionally within themselves. (1874/1995: 88–89)

Here I wish to retain just one key portion of Brentano's doctrine: the model of *inexistence*. Information or images, which we might also term 'intentional objects' in the manner of Husserl, are contained in another object, giving them the status of immanent objectivity. This contrasts with the withdrawn, never-immanent objectivity of real objects. Intentional objects are not autonomous, but exist only on the interiors of real ones.

But two other aspects of Brentano's theory must be rejected. First, we should refuse his implication that there is no intentionality in the physical realm. We have already suggested that information, translation, relation, or image do not just belong to mind in the narrow sense of advanced conscious beings, but characterize any relation at all. Electrons, just like humans, encounter mere informational images of atomic nuclei, and do not deal with these nuclei in naked presence any more than we do. This is the sense in which electrons have intentional experience, however primitive it may be. Second, even if intentional objects exist at the core of some other object, there is no reason to claim that this other object is *me*. In fact, my perception of the tree is not on the inside of me, but on the interior of a strange new object: my *relation* with the tree. Too often, the term 'object' is restricted to durable physical solids, and for this reason it might seem odd to describe my relation with the tree as an object. But the problem disappears if we redefine an object as anything that has intrinsic reality apart from the information that someone or something might have about it. And my relation with the tree clearly meets this standard. The relation clearly occurs, or there would be no perception; yet this relation is also not exhausted by my consciousness of it, since I can make mistakes in describing my perception, and painstaking phenomenological work is needed even to attain partial success. Just as little can some outside observer exhaust my relation to the tree, perhaps by describing it in the functional terms of experimental psychology. Hence, the relation between me and tree meets the criteria for an object. And it is this object, not me, whose interior contains my perception of the tree. It should be noted in passing that there is a strange asymmetry here. While the tree-image or tree-information is what appears in-existently in the perception, I myself am present as a *real* object rather than a merely intentional one, since I really am experiencing the image. Thus, the interior of an object contains the proximity of a real object with an intentional object. This means that if the tree manages to relate to me as well, this would generate a reciprocal but non-identical object in which the real tree brushes against the phenomenal version of me. But this is a theme for another occasion.

To change perception from something immanent in me to something generated by my *relations* with other things is reminiscent of Rockwell's best arguments in *Neither Brain Nor Ghost* (2005). His central idea in this book is the impossibility of localizing consciousness in the brain. Rockwell first contends that mind must be extended into the nervous system as a whole, but he eventually brings the entire surrounding world into the drama of consciousness:

> When we inquire into the world, we discover the system whose natural parts are the body, the brain, and the world. But we have no reason to assume that the brain can produce experience without the other two, any more than the lung can perform its proper function without oxygen. (p. 101)

And here I agree. But although it is admirable when Rockwell brings relations into the picture, he indulges in the pragmatist excess of *reducing* things to their relational contours:

> [W]e experience, not sense data that remind us of objects, but *the objects themselves* in a world with which we interact: tables and chairs in which we sit, and people with whom we have relationships, people whose likeability and cruelty or beauty is every bit as predicable to them as is their height or weight.

This passage denies the model that I advocate of information as a more-or-less faulty translation of intrinsic objects. For Rockwell, the things themselves simply *are* the information we have about them. What bothers Rockwell most is "the idea that we start from experience that exists only in our minds, and from this infer the existence of a universe of dead clockwork." But here he mixes two distinct issues. Realism about the external world in no way entails a universe of dead clockwork. Rockwell clings to the relationist view that there is no cryptic reality behind how things are accessed. But Rockwell's pragmatist views need not be opposed with a dead-clockwork version of realism: *au contraire*, the "dead clockwork" of physics means a purely *relational* system of things dealing with each other as simplified abstractions. Hence, Rockwell's pragmatist relationism ironically puts him in the same camp as the relationism of clockwork materialism. Furthermore, his insistence that a person's cruelty or beauty are just as real as their height or weight is both revealing and irrelevant. For why does Rockwell assume that height and weight are dull clockwork realities existing in a gray outer world, while cruelty or beauty must be exhausted by their manifestation to us? Beyond any *information* I have about a person's cruelty or beauty are the cruelty or beauty themselves, summoning me to explore their flickering depths. Although we should honor Rockwell's sensitivity to the fact that perception is produced by relations rather than by a simple brain-thing, there is no reason to endorse his pragmatist relationism, which already led him to miss the surprisingly *realist* lesson of Heidegger's tool-analysis: tools that hide behind any informational or relational profile.

We should make a final point concerning the various different *levels* of the world. We have seen that Chalmers largely rejects such levels. He offers a one-layered physical world of tiny things, and an apparently two-layered mental world in which tiny microminds combine at some point into full-blown macrominds. Yet we should no longer speak of a misleading dualism of minds and bodies. The real duality is between real objects and their interiors – volcanic regions riddled with intentional objects. Now, there is no reason to assume that objects are found only at Chalmers's own levels of microparticles and two sizes of minds, with everything else reducible to structure or function. Objects emerge at countless different levels. This is argued for instance by Manuel DeLanda (2006), who proposes a wonderful model of a world consisting of

assemblages: real units made up of subpersonal components. In this way, he populates Chalmers's empty macro-sized wasteland with countless genuine entities. As DeLanda puts it, "the terms 'micro' and 'macro' should not be associated with two fixed levels of scale but used to denote the concrete parts and the resulting emergent whole *at any given spatial scale*." An emergent whole "must be shown to emerge from the interaction between *subpersonal components*." (p. 32). DeLanda even offers some criteria for what makes a real assemblage. He names at least four characteristics of new emergent realities, none of them permitted by Chalmers's less stratified vision:

1. Obviously, the emergent whole must have emergent properties not possessed by its parts. Here we should not be hasty in assuming that emergent *physical* processes can easily be reduced to lower-level physical ones.[14] If "no one could have predicted" the emergence of consciousness from the brain, it is equally true that "no one could have predicted" inert gases and rare earths just by knowing about protons, and "no one could have predicted" the basic forms of government just from knowing about human beings. There are effects of surprise and novelty at every possible level, not just at a single magical gap between microparticles and consciousness.

2. The whole can have retroactive effects on its parts.[15] This is easier to see in the case of large social objects such as fraternities and armies, but it holds at lower levels as well.

3. Emergent wholes are characterized by "redundant causation," in the sense that many of their parts can be removed or replaced with no impact at all on the whole (p. 37). For example, even if it is true that the atoms in the human body are completely replaced every seven years or so, this is not grounds for claiming that the body is no longer the same body.

4. Emergent wholes often create *new* parts. As DeLanda puts it,

> while some parts may pre-exist the whole, others may be generated by the maintenance processes of an already existing whole: while cities are composed of populations of interpersonal networks and organizations, it is simply not the case that these populations had to be there prior to the emergence of a city. In fact, most networks and organizations come into being as parts of already existing cities. (p. 39)

This is also clearer with large social entities, but holds for smaller objects as well.

---

14. The contrary assumption is shared even by Galen Strawson, who agrees with Chalmers that phenomena such as liquidity and convection cells do not pose the same sort of mystery as consciousness. Strawson writes: "In both these cases we move in a small set of conceptually homogeneous shape-size-mass-charge-number-position-motion-involving physics notions with no sense of puzzlement" (2006: 13). Like Chalmers's own model, this grants materialism the right to run rampant over all of reality *except* consciousness.

15. 2006: 34. DeLanda credits Roy Bhaskar for this point.

In short, there is far more drama underway at each level of objects than Chalmers is willing to grant. To assemble a new object also means to assemble a new interior to that object, and hence a new information space. Instead of Chalmers's two-storey building of physical and phenomenal, DeLanda suggests a palace of infinite storeys. Every object is a capsule or container hiding its own interior. The world is made of autonomous ascending and descending levels of bubbles, vacuum-sealed spaces of information that nothing can penetrate, as if the world were a nested set of black holes.

This model may seem strange, but it has the immediate benefit of dissolving Chalmers's two biggest problems. First, consciousness is no longer a sterile epiphenomenon irrelevant to causation. Quite the opposite: an informational space that houses intentional objects is now the *only possible site* of causation, since real objects withdraw from each other to such a degree that they are never able to touch. Instead of an epiphenomenon, consciousness is now an *infraphenomenon* in the heart of an object, confronting images in their intentional inexistence or immanent objectivity. Second, the notorious combination problem is transformed into something more like the occasionalist problem. It is no longer a question of billions of microminds being packed together in a single mid-sized macromind. Instead, there are new assemblages of objects at each level, whose abstracting tendencies *cut them off* from most of the reality existing below. Just as cones in the retina abstract from most visual information, any macro-sized object will not have a chance of accessing most of the information possessed by its increasingly tiny sub-components. The world is filled with levels and way stations, and information does not smoothly cascade from one level to the next. The world is made of chunks, and each chunk translates information into a new language. A table is not locally composed of trillions of particles, but is made of only four or five pieces, isolated from most of what goes on deep below. Likewise, the conscious experience on the interior of an object arises from the relation between a small number of locally relevant objects, not from the trillions of tiny minds that swarm beneath the radar. Thus, we no longer have a combination problem of the sort that plagues Chalmers. But we do have a new problem, as any philosophy must. Namely, the problem is how immanent relations in the interior of an object ever puncture that immanence so as to affect *real objects*, instead of just making contact with pure images. This problem provides a lengthy research program, and cannot be discussed further here. Instead, I will close with a brief reflection on whether the model just described also amounts to panpsychism.

4. Panpsychism and endopsychism

Among other activities, David Skrbina often acts as a ruthless Minority Whip in the field of panpsychist studies. He frequently wonders aloud why certain authors walk the edge of the panpsychist pool while refusing to dive in. Instead of clear consideration of the panpsychist option, "one [usually] finds a mushy middle ground in which

philosophers fail to clearly articulate their views one way or the other." (2005: 7). In the specific case of Chalmers:

> If [John] Searle has one valid point [in his response to Chalmers], it is that [he] is unwilling to follow through explicitly on the consequences of his own theory: information is postulated to have a phenomenal aspect, and information is everywhere, then so is experience. (pp. 242–243)

Concerning my own case, Skrbina writes: "I know you have been dancing around this whole [panpsychist] issue for awhile. . ."[16] Fair enough. Here is a good example of my previous dancing:

> [It is] invalid to draw [panpsychist] conclusions, and to conclude that because humans and rocks both enter into relations, rocks must already have human cognitive powers in germinal form. . .. If we shift to the case of glass. . .. the [panpsychist] is like someone who says that everything in the world is equally glass, though perhaps in a "weaker" form than windows. What is lacking is the most sensible alternative, which is to say that human knowledge, just like glass, backbones, reptiles, music, and mushrooms, arises at a certain point in the history of the universe, but without necessarily forming some sort of root metaphysical dualism in the world. I see no convincing reason to regard human knowledge as of such pivotal importance in the universe. (Harman 2005: 83–84)

There are two problems with this passage from my recent past. The first is that it takes panpsychism in too narrow a sense. Skrbina's book frequently observes that there is "a sort of panpsychist hierarchy of terminology, ranging from the most human-like to the most universal." (p. 18). His examples of various aspects that one might include in a panpsychist theory include: self-consciousness, cognition, thought, consciousness, sense, awareness, sentience, emotion, experience, mind, mental state, what-it-is-like, qualia, nous, psyche. The theory of universal relations between objects sketched above clearly belongs somewhere on this list, though it may remain unclear exactly where.

The second problem with the passage is its insufficient candor in admitting to the key dualism in question. If we speak of a universe where all objects withdraw equally from one another, then this is neutral monism insofar as everything is an object, and radical pluralism insofar as there are countless objects. But in another sense it is admittedly a form of frank dualism, given its basic split between hidden real objects and accessible images housed on the interior of objects. While it may be true that the *human* mind is of no more ontological importance than glass, something like mind is still present everywhere, and this is surely not true of glass. In the duality of objects and relations, there is something distinctly mind-like about the 'relations' side. On the whole, I am now more inclined to embrace the term 'panpsychism' than before, since the obligation I feel of placing all relations between entities on the same

16. Personal communication, June 27, 2007.

footing puts me closer to the panpsychist position than to either materialism or the usual human-world couplet.

If one thing seems to unify the mentality of all entities, from specks of dust, to bats, to humans, to demigods, it is what Chalmers describes as the experience of information. And if we are committed to reality having some sort of intrinsic character (as I am), then this entails some sort of sub-informational reality that can be presented only in translated form. It seems obvious that a genuine realist standpoint would need to focus on the tension between these two realms: realities vs. their informational profiles for other realities. But this would still miss something important, since it would overlook any stratification *within* the informational sphere. And here a surprising contribution is made by Edmund Husserl, whose human-centric phenomenology seems like such a poor match for panpsychist themes.

Husserl is rightly viewed as an idealist who brackets all consideration of the natural world and lets philosophy unfold only in the conscious sphere. But there is more to Husserl than this. Unlike most idealists, Husserl gives us an ideal realm that contains both intentional objects *and* the accidental ways in which they happen to appear (a.k.a., "adumbrations"). This challenges the usual model of conscious experience, which holds that experience encounters a certain content of specific qualities. In the famous *Logical Investigations* (1970), Husserl challenges the mainstream standpoint of British Empiricism, which holds that experience is always of "experienced contents" – that our supposed experience of a unified apple or horse result from a supplementary bundling of numerous discrete qualities. For Husserl, and for the entire phenomenological tradition he inaugurates, what we experience are intentional *objects* rather than free-floating pointillistic sensations held together through the force of habit. He even makes a similar criticism of his honored teacher Brentano. Whereas Brentano had held that "[intentions] are either presentations or founded upon presentations," Husserl counters that "every intention is either an *objectifying act* or has its basis in such an act." (p. 648; emphasis modified).

Now, what is the difference between a presentation and an objectifying act? A presentation consists of highly specific informational content, in which everything in our field of experience has a determinate color, position, surface glitter, and a specific distance and angle from the observer. All parts of the presentation are equally real *qua* presentation. Yet things are different if we consider experience as made up of objectifying acts. In this case, I look straight through the outer costume of things and intend objects as *essential units*. When circling a tree or a warehouse the presentation changes constantly, while the objectifying act itself does not. I intend the same *object* through all my motions, even though the *presentation* changes constantly. This all comes to a head in the famous *Logical Investigations* VI, where Husserl (p. 712) speaks of how the object "is only given 'from the front,' only 'perspectivally foreshortened and projected' etc." And

> whether I look at this book from above or below, from inside or outside, I always see *this book*. It is always one and the same thing, and that not merely in some purely physical sense [which plays no role in Husserl's philosophy- g.h.], but in

> the view of our percepts themselves. If individual properties dominate variably at each step, the thing itself, as a perceived unity, is not in essence set up by some over-reaching act, founded upon these separate percepts. (p. 789)

In other words, we no longer have just a distinction between real objects and their informational simulacra, with the latter forming the straightforward topic of experience. Instead, Husserl's philosophy gives us a permanent duel *within* the informational realm: a duel between intentional objects and the swirling surface-effects through which they are announced. In short, experience for Husserl is quantized into chunks, each of them encrusted with an ever-shifting patina of accidents.

Now, even panpsychists will surely accept that at least *some* features of human mentality are not found in whatever microminds might populate the world. High-level thinking capacity, color vision, language, emotional life, and the ability to dream are among the numerous mental gifts that we would not expect to find very far down the chain of mental beings. But what about Husserl's object-oriented model of intentionality? When considering the duality between intentional objects and their shifting surface-effects, it might be asked whether this is the sort of primitive mentality that belongs to all real beings, or whether it has all the special human complexity that we find in the ability to learn languages and make mathematical discoveries. The question is not whether all objects experience information generated by other, concealed real objects, since that point is already granted by the model developed so far. Instead, the question is whether even the most primitive sort of experience must encounter immanent objects in the intentional realm, rather than splotches of isolated qualities. My suspicion is that intentional objects are a primitive phenomenon found in all experience, and do not first arise in higher forms of consciousness. If this is so, then even the most rudimentary inanimate experience is torn by a rift between unified intentional objects and their shifting accidental profiles. And this suggests that greater mental complexity must arise from improved articulation of this very rift. Is it not the case that the apparently superior achievements of animals compared with stones are a matter of creating and distinguishing new *objects*? Physical organs ranging from ears to eyes to brains allow for greater fragmentation of experience into ever finer-grained chunks or zones. The discovery of mathematical objects adds even non-tangible realities to the field of human mentality. Complex human societies are able to preserve even dead persons in the form of historical records, and our fixed names, identification numbers, and career resumés help turn us from interchangeable others into highly articulated specific objects. What makes one mind more complex than others is probably its greater ability to discover, generate, and maintain a greater number of autonomous objects – and this is also what makes the social mind more powerful than any of our individual minds.

If this is true, if all interaction between entities involves an encounter with intentional objects, does this give us panpsychism? Almost, but not quite. The truth is subtler and stranger than this. Namely, although there is psychic experience on the inside of every object, that experience is not being had by the object itself. Hence,

although every object has an interior, it is not necessarily the case that every object will enter into relations with others, and hence have experience of immanent objectivity on the inside of another. Earlier I claimed (against Brentano, and to some extent with Rockwell) that experience is not something internal to me, but internal to my *relation* with a tree, horse, apple, or whatever I perceive. If all experience occurs on the inside of an object, that object is never I myself, but a composite object formed of me and that to which I relate. Within that interior, I experience an informational image of the tree, and it may well encounter an image of me as well (though that would take place on the inside of a different object, if a closely related one). But consider the status of the larger object formed of me and the tree, or the parallel object formed of the tree and me. It need not be the case that such a larger object enters into relation with anything else. It certainly has an interior, because that is where my experience occurs right now. And to have an interior is enough to make it real, since that is all it means to be an object: to have a genuine internal reality not exhausted by any outside view. But the interior of that larger object is experienced only by one or more of its *pieces*, not by the larger object itself. No object experiences *its own* interior, just as I myself do not – I experience the interior of my relations with the things I perceive, not the interior of myself. It is nearly certain that there are many objects that have a genuine reality, but which still enter into no further relations. Such objects would be genuine inhabitants of the world, despite not entering into relation with anything else. Hence they would be real, but without experience. Instead of a full-blown *pan*-psychism, then, we would have to content ourselves with an *poly*-psychism, in which entities might be real while encountering nothing at all. Many real objects might be doomed to perpetual sleep.

In closing, let's review what this article has tried to show. First, the traditional mind–body problem was replaced by the occasionalist model of a body–body problem. Second, the supposed difference between first- and third-person descriptions was shown to be a false duality, since both kinds of description belong on the same side of the fence when compared with the zero-person intrinsic nature of things. And finally, it was suggested that while there is experience or immanent objectivity on the inside of every object, what does the experiencing is not the whole object itself (my relation with a tree), but only one of its components (in this case, I myself). This opposes Brentano's claim that perception occurs on the inside of the perceiver, and veers toward Rockwell's view that consciousness is a relational sort of reality. It follows that even if all entities *contain* experience, not all entities *have* experience. Hence panpsychism is not strictly true, even if there are exponentially many more minds than is usually believed.