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Panpsychism and Neutral Monism: How to Make Up One's Mind

0.

Chalmers has helpfully distinguished a slew of combination problems.¹ His overall sense is apparently that *constitutive Russellian panpsychism* and *constitutive Russellian panprotopsychism*² are broadly equally afflicted. I aim to show that panprotopsychism is actually in much better shape than panpsychism, once one takes their respective combination problems into account. Panpsychism's distinctive combination problem, concerning the combination of subjects, reveals the theory as deeply unsatisfactory. The view I endorse—a form of panprotopsychism labeled 'panqualityism' by Chalmers—doesn't face the subject combination problem. On panqualityism the world is ultimately constituted of quality-instances, where we can usefully think of these as *unexperienced qualia*—properties just like the qualia we experience, only without anyone experiencing them.³ But since panqualityism does without the panpsychist's microsubjects, it must generate macrosubjectivity from scratch—this opens a new arena of combination problems specific to forms of panprotopsychism.

¹ See his paper in this volume. Some of these problems have been knocking around for a long time, as we'll see. But it's fair to say that no one so far has separated and clarified them in such a comprehensive and careful way as Chalmers does.

² My concern in this paper is to contrast constitutive Russellian versions of panpsychism and panprotopsychism (see Chalmers' paper for these positions). I am with Chalmers in considering them the most promising variants of the general positions they represent (for reasons see again Chalmers' paper). I will henceforth generally refer to these variants simply as 'panpsychism' and 'panprotopsychism'.

³ I won't try to deflect here the sense some have that the very notion of unexperienced qualities is incoherent. See Coleman 2015, 2013 and 2012 for efforts to make sense of unexperienced qualia.

Chalmers believes panqualityism cannot provide the required reductive explanation of subjectivity, because it is vulnerable to a kind of conceivability argument. I'll argue (section IV) that panqualityism is not vulnerable in the way Chalmers suggests. First I'll explain what's wrong with panpsychism (section II), and in between (section III) I'll offer suggestions as to how panqualityists might deal with some of the other combination problems Chalmers mentions, as well as some he omits. The overarching thesis is not just that panpsychism is effectively a non-starter, but that panqualityism has the resources to deal with its combination problems. In view of the advantages panpsychism and panqualityism share with respect to mainstream physicalism,⁴ this installs panqualityism as our best prospect for a theory of how to make up the mind.⁵ I start with some discussion and categorisation of the combination problems.

I.

i. The most important combination problems Chalmers exhibits include: *the subject problem*, of how a number of subjects could synchronically constitute another subject; *the palette problem*, of how a handful of basic qualities could

⁴ See Chalmers forthcoming for an account of these advantages.

⁵ In another possible world, I should have liked to call panqualityism plain 'physicalism'. But since our actual physicalists for some reason feel the need to deny that basic material entities have *any* qualities at all—i.e. not-merely-relational properties about which it is appropriate to say *there is something it is like*, e.g. colours—I am forced into a fruity name (Chalmers gets it from Feigl 1958, who credits in turn S. C. Pepper). These same actual physicalists spend much of their time adopting theoretical contortions of various painful sorts, in order to evade the glaring truth that *if the ingredients that compose us (and the world) have no qualities, there is no possibility of our experiencing qualities*. The confident counterfactual physicalists with whom I would wish to associate are by now busily working out a fully-fledged *qualitative physics*, which explains not only the material dynamics and development of (what we understand as) physical systems, but also the dynamics and development of (what we understand as) mental systems, all from a single set of basic principles. They can explain why pains have the causal profiles they do (and must have), and possess a deductive explanation of how paracetamol cures headache. Meanwhile, their actual counterparts are exploring hopefully the hypothesis that *there are no qualities only wholly deceptive representations of qualities within our deluded minds*. The contrast, when once stated, is damning.

generate the vast array of macroqualities; *the quality problem*, of how qualities constitute other qualities at all, *the structural mismatch problem*, of how the micromental could constitute the structure of the macromental given that the micromental is isomorphic with the microphysical; *the unity problem*, of how disunified instances of micromentality come together to yield the unity we find at the macromental level; *the grain problem*, of how we get a homogenous phenomenal field at the macro-level from discontinuous instances of micromentality; *the boundary problem*, of how micromentality is corralled into bounded units of consciousness.⁶ Some of these problems have variants applying specifically to panpsychism or panprotopsychism: I'll detail these as we go.

ii. We can distinguish two kinds of combination problem. A completed naturalistic account of mentality would mesh our best theory of minds with our best scientific theory, in particular with physics and neurobiology. Much of what we do as philosophers of mind is somewhat insulated from detailed scientific concerns, however. We do often employ scientific concepts as starting point, and we certainly *hope* that what we're devising isn't obviously inconsistent with accepted science. But often enough we're busy working on things from within the mind side—developing theories aimed at explaining aspects of mentality, and which are framed largely in mental or cognitive terms.

Consider as an example Rosenthal's *higher-order thought theory of*

⁶ I'm using 'micromentality' to cover both microexperiences, as on panpsychism, and microqualities (which are non-phenomenal), as on panprotopsychism. In fact panprotopsychists often deny that microqualities are mental, on the ground that they are not conscious. I'm suppressing that point for ease of exposition.

consciousness,⁷ which analyses a conscious state as one that is the object of the right kind of occurrent thought. Naturally, Rosenthal would be dismayed if his theory turned out to be incompatible with our best neuroscience—were there, say, no feasible neurological candidate for the HOT monitoring mechanism. Yet it's clear that, broadly speaking, he *first* formulated his theory in mental/cognitive terms, and (for various reasons) only down the line is there any chance of seeing how HOT theory meshes with the science.

Meanwhile Rosenthal is bombarded with objections from philosophers. These are almost exclusively in mental/cognitive terms: It's alleged that Rosenthal's theory doesn't capture the *explanandum*, phenomenal consciousness, because an unconscious thought plus an unconscious sensory state do not a conscious state make. Worse, it's claimed that Rosenthal's theory is internally inconsistent.⁸ Others say it cannot cope with possible content mismatch between HOT and sensory state.

These objections to HOT theory all take place within the arena of mind-theory, the immediate area wherein HOT theory aims to forge a coherent and illuminating position. They test its consistency, or its fit with other things we believe about the mind, on that same theoretical level. Quite another sort of objection might allege that HOT theory cannot be neurologically implemented, or is in some other manner incompatible with established science.⁹ Objections to a

⁷ See e.g. Rosenthal 2005.

⁸ Block 2011 claims it offers inconsistent conditions on a conscious state.

⁹ Another 'bridging' objection to HOT theory runs that infants lack the architecture for HOTs, though they are plausibly conscious.

theory of mind that flow from its fit with our best science I call '*bridging problems*'—they are difficulties around our building a bridge between a given theory of mentality and our scientific theories of the brain and physical world. The former sort of objection are 'internal problems'—they are difficulties alleged to afflict a theory of mind taken on its own terms, or within the field of theories of mind.

iii. It becomes apparent that some of Chalmers' combination problems are internal problems, while some are bridging problems. The subject problem is internal—it concerns our concept of a subject and whether subjects could constitute another subject. The palette problem as Chalmers frames it is a bridging problem. Chalmers says the difficulty concerns a small set of qualities generating a 'vast array' of macroscopic qualities. That phrase suggests a problem of *quantity*: how do you get many (type distinct) macroqualities out of a few microqualities? The reason there are only a few microqualities is that Chalmers makes the microqualities isomorphic with microphysical properties, of which there are apparently only a handful. So the problem is: we want to make microqualities isomorphic with microphysical properties;¹⁰ that means only a few microqualities, so how do they generate masses of macroqualities? With the tie to physics removed this problem would be considerably less impressive: without the limited repertoire of microphysical properties we'd have no reason not to indulge in masses of microqualities. And if we have masses of microqualities, it won't seem so problematic to derive a vast array of macroqualities from them, taken just in numerical terms. There are enough

¹⁰ This is the *Russellianism* in constitutive Russellian panpsychism/panprotopsyism.

ultimates—we could even have every macroscopic quale-type mapped to a token ultimate, or something like that. So *Chalmers'* palette problem is a bridging problem.

Chalmers distinguishes a further quality-related problem, which we might call the *production problem*. The difficulty is that we've no model for how qualities combine when these are separately instantiated, say by two distinct ultimates. If we have red and white in the same spot we can understand that as pink, Chalmers reckons. But if the red and the white belong to different items, how do we then get the pinkness? This difficulty appears closely related to another quality problem Chalmers doesn't directly consider, but which I find in Lucretius. It has to do with whether we *can* understand red and white in the same place as pink, or at least, with how exactly we do this. Lucretius compares combining ultimates of different qualities to manufacturing a perfume, saying:

Among the first things that you need to seek
Is an oil that is, so far as you may find one
Odourless and emits no breath of anything.
For this will least with harsh taint of its own
Corrupt the scents concocted with its substance.
For the same reason atoms must not bring
An odour of their own in making things¹¹

If you assign an ultimate a determinate quality, then as long as it continues to exist in the wholes it composes, which is a condition of its *constituting* those wholes, its quality must show up in—contaminate—them. So even if we can get past the production problem, and understand how separately instantiated

¹¹ *On the Nature of Things*, Book II: 849-855.

qualities could interact to combine, we have an arguably more basic problem, of understanding how qualities that can combine actually *do* so. What does it even mean for two qualities to constitute a quality? Pink isn't red, and it isn't white either. One might expect that for red and white to survive in combination we would get as product *a patch of red alongside a patch of white*. Perhaps at a distance we might *see* that as pink, but it isn't, by itself, pink. We need some conception of qualities interpenetrating and yielding a new product, whilst nonetheless (somehow) persisting, corresponding to the combining of ultimates and their properties that also survive in the combination.¹² These latter two quality problems, then, concerning *production* and *contamination*, are both on the internal side—pertaining to the mechanics and dynamics of qualities taken by themselves, nothing really to do with science.

There may be one further quality problem, which seems to exacerbate the contamination problem. This concerns qualitative *incommensurability*. If ultimates have fixed qualities, just what set of microqualities *is* it that can be re-arranged now as the smell of roses, now as an orgasm, now as a percept of the blue sky? These macroqualities seem so qualitatively *different*, it's hard to imagine generating them from some stable basic palette.¹³ This problem is most

¹² To be clear, if, as in *fusion*, the ingredients—things, properties—do not survive production of the novel entity, then this is causal emergence, not constitution. See Chalmers' discussion (this volume) of Seager's 'combinatorial infusion' as an option for panpsychists.

¹³ Lockwood and Foster have recently been concerned with this problem. Lockwood: 'What, one may ask, is the use of attributing, say, embryonic colour to the ultimate physical components involved in the neuronal goings-on that are supposed to be constitutive of a phenomenal patch of red, if these self-same constituents are also to be capable of figuring in auditory or olfactory experiences which are wholly devoid of visual phenomenology?' (1993: 277) Foster: 'How...could a different arrangement of pain-particles yield a visual experience or a surge of anger?' (1991:127) And: 'if we are dealing with a visual experience, then presumably we have to assign visual qualities to the constituents of the neural item in order to account for its introspectible

vivid when we limit the micropalette to a few qualities in order to fit with physics. But it isn't essentially a bridging problem; it would be problematic even if we decoupled from Russellianism and went in for masses of microqualities.¹⁴

The *contamination problem* would be a challenge even if we didn't face apparently incommensurable macroqualities—qualities that seemingly couldn't come from the same ingredients merely rearranged. White and red don't seem *worlds apart* qualitatively, in the way that both do when contrasted with the smell of roses, and in the way these three qualia do, in turn, when compared with the feeling of a pinch on the forearm. Yet still we have work to do to grasp how red and white exist in—contaminate—their pink product. The *incommensurability problem* can be seen as making the *contamination problem* all the harder, or as an especially tricky aspect of it.¹⁵

What we require overall, when it comes to our micropalette, is a story which explains the coming together of separately instanced qualities, explicates the very notion of qualities constituting other qualities, and defuses the sense that certain macroqualities are so qualitatively different from one another that they couldn't derive from a stable set of basic ingredients. If we can do these things

character. But these qualities would not be appropriate to the roles of similar physical constituents in neural items correlated with non-visual experiences' (*Ibid.*: 129).

¹⁴ These would still have to show up in their products, and some would surely seem qualitatively too far away for this to be possible.

¹⁵ It's pretty clearly unacceptable to assign fixed qualities to ultimates in isolation, and then say that in combination they simply *lose* these (this would be to imagine that a red and a white ultimate each independently 'turn' pink upon meeting). For, as Lucretius says: '...if they were to give up from their bodies, Their own power of feeling, and acquire another one, What was the point of giving them in the first place, What is taken away?' (*On the Nature of Things*, Book II: 924-7). Generally speaking, fundamental intrinsic properties must 1). *remain in play in constitution* and 2). *be directly explanatorily relevant to their products*. This point later forms the core of my objection to panpsychism.

we will presumably also answer Chalmers' question about how the vast array of macroqualities is produced.¹⁶

iv. *Structural mismatch* is a bridging problem. If microexperiential structure matches microphysical structure, then it seems macroexperiential structure is restricted to isomorphism with macrophysical structure: yet macrophysical and macroexperiential structures differ, Chalmers suggests. Were it not for the matching of microexperiential structure to microphysical structure, we'd presumably be free to envisage microexperiential structure as more obviously appropriate to yielding macroexperiential structure, so this problem concerns meshing our account of the mind with science.¹⁷ Chalmers' *grain problem* is something like an internal analogue of the *structural mismatch problem*. It has little to do with science, stemming only from the thought that microexperiential instances are *discontinuous*, while macroexperience, supposedly constituted by them, is continuous.¹⁸

v. Finally, the *unity problem*, and nearby *boundary problem*, are internal. The question is: if you have a phenomenally unified and bounded experiential field,

¹⁶ Recognition of something like these problems is probably behind Feigl's suggestion (1971: 308) that on panqualityism the fundamental qualities had better be relatively 'colorless'. But then: 1) We'd face a problem around their having enough qualitative 'oomph' to generate macroqualities at all. 2) Making the basic qualities homogenous ('colorless') doesn't apparently help with the problem of how we get, *via* their combination, to such remote and distinctive locations in quality space as we actually find.

¹⁷ Chalmers says '*given* a Russellian view, it is not at all easy to see how these [micro] structures could be [allowed to be] so different that they yield the vast differences between macrophysical and macrophenomenal structure', p. 28, my emphasis

¹⁸ Sellars' original grain problem is more plausibly about bridging: *neurons* are discontinuous, he says, while the experiential field is continuous, yet the latter is supposedly constituted by the former. See e.g. his 1963: 35.

how is that constituted by discrete instances of micromentality? Since for panpsychists microqualities are had by microsubjects, this difficulty is for them entwined with the *subject problem*: how are separate microsubjects to constitute a macrosubject with its own, single, experiential field?

vi. There's a case for considering internal problems as more pressing than bridging problems. It seems that if we're unable to put a coherent theory of mind on the table in the first place, taken on its own terms, then we needn't venture to check how it matches with the science. The theory is already hopeless. Of course lack of mesh with science is also serious. But since there is usually more than a single option for understanding the science of the moment, and the dominant scientific account in an area at a time is highly liable to shift, this makes lack of bridging arguably less urgent than an internal clash for a theory of mind; at least, as regards *widely-accepted* and *stable* posits of mind-theory, like phenomenal consciousness, or the existence and nature of macrosubjects, our prime concerns. Given lack of bridging, one could at least hope for a change on the scientific side to remove the obstacle. In any case, even if a mind theory *fatally* fails to bridge, running against some scientific bedrock, it seems that to get that far along the proving process it had already to be in decent shape internally. Thus internal problems have a certain theoretical priority. The really big immediate questions for panpsychism and panqualityism, accordingly, concern their most serious respective internal problems: for panpsychism, whether it can deal with the subject combination problem; for panqualityism, whether it can generate subjects from non-subjects. These topics form the backbone of our

discussion.

II.

i. Examination of its distinctive internal problem, the subject combination problem, will lead us to seriously question the basic theoretical motivation for panpsychism.¹⁹

ii. James is widely cited on the subject problem,²⁰ but Lucretius had his eye on this one too. Were ultimates subjects of experience, he argues:

...their unions and combinations,
Would make nothing more than a crowd of living things
Any more than men and cattle and wild beasts
By combination could make anything.²¹

Taking James and Lucretius together, we can discern a positive and a negative subject problem for panpsychism, which correspond, roughly and respectively, to Chalmers' *unity problem* for panpsychism and what he calls the *subjects-summing problem*. The negative problem, subjects-summing, is effectively an *explanatory gap*: no amount of talk of subjects coming together seems to entail anything about any further subject. So it doesn't appear that panpsychism can account for the constitution of a macro-subject, which was certainly the aim of constitutive Russellian panpsychism.²² The positive difficulty is something like a genuine metaphysical stumbling-block or apparent *impossibility*: How *could* you

¹⁹ Our focus is constitutive Russellian versions of panpsychism and panprotopsyism, recall.

²⁰ The very famous passage being the one occurring at p.160 of his 1890. See Strawson 2006, and accompanying papers, for more recent discussion of the subject problem.

²¹ *Ibid.*: Book II, 920-23.

²² For the definitive version of this argument see Goff 2009.

hope to produce a phenomenally unified, single-perspective, subject by assembling a group of subjects each of which essentially has its own perspective? It really doesn't seem that you could, in a constitutive manner. Constitution requires the relationship between parts and whole to be synchronous, and means that all there is to the constituted phenomenon are the entities said to constitute it, their properties, and their relations. That entails, for panpsychism, that at a time the existence of a single macro-level perspective—a conscious point of view like one of ours—is *nothing but* the existence of a group of (micro)subjects, each with its own perspective. But a group of subjects looks like a crowd, and a crowd is not a unified conscious mind. I've developed the positive problem elsewhere,²³ but as the explanatory gap problem for panpsychism is more widely known, and suffices for our purposes, I'll concentrate on it here.

As currently elaborated, the subjects-summing problem gets embedded in the following argument:

(1) *If panpsychism is true, the existence of a number of microsubjects with certain experiences necessitates the existence of a distinct macrosubject.*

(2) *It is never the case that the existence of a number of subjects with certain experiences necessitates the existence of a distinct subject.*

(3) *Panpsychism is false.*²⁴

²³ See Coleman 2013.

²⁴ Taken from Chalmers, this volume, p.XX, who credits Goff 2009. Note that in Chalmers' formulation 'panpsychism' reads 'constitutive panpsychism'; this is unnecessary for us given the earlier decision to focus on constitutive Russellian positions.

The support for premise two (the subjects-summing problem) is the alleged fact that:

() For any group of subjects (with certain experiences), it is conceivable that those subjects exist (with their experiences) and no other subjects exist.*

I find this argument fairly powerful. But I don't think it quite gets to the bottom of the deep problem panpsychism faces in this vicinity. This deep problem flows from the following principle:

*(**) Fundamental intrinsic properties help to explain their macroscopic instances.*

This principle is metaphysical on its face, but it also has a methodological aspect. Fundamental posits, especially of intrinsic properties, must earn their explanatory keep. Specifically, we posit a fundamental property for the purpose of accounting for its higher-level instances.²⁵ Mass, charge and extension all do this job, indeed it explains their being attributed at the basic level at all. We don't make otiose fundamental posits, so any posit that doesn't earn its explanatory keep should be discarded. More properly, it should not have been entertained in the first place. This is the situation we face regarding the panpsychist's posit that ultimates possess the intrinsic property of subjectivity.

iii. The reason the subjects-summing argument doesn't quite touch the depths of this problem has partly to do with the fact that it talks not in terms of

²⁵ This isn't to say there aren't other explanatory roles played by fundamental posits—but such properties must *at least* explain their higher-level instances, where they have such.

explanation, but of *necessitation*. This permits the panpsychist a certain kind of sidestep. If no mere assembly of subjects necessitates a further subject, but, as prospective panpsychists, or theorists rightly bent on giving the model a fair chance, we aspire to such necessitation, a natural suggestion arises, in the form of Goff's *phenomenal bonding*, tentatively endorsed by Chalmers.

Goff's idea, I believe, is that we've perhaps focused too exclusively on microsubjects and their properties, without thinking imaginatively enough about what relations among them might accomplish.²⁶ Perhaps the addition of some special relation to a set of subjects might supply the necessitation of a macrosubject. So Goff's proposal is that a macrosubject forms when a set of microsubjects is said to 'phenomenally bond': a subjective analogue, it seems, for the bonding among atoms which forms molecules.

But, we may reasonably inquire, concerning a set of subjects from whom a macrosubject is thus produced, what exactly *is* their phenomenally bonding, just what does it amount to? As far as I see, each microsubject contributes some *experiential contents* that then get enjoyed by the macrosubject. This much makes sense: it's not obviously incoherent that a third person could have experiences now, constituted of some of what you and I are experiencing; why shouldn't we contribute experiential contents to this individual? Maybe we can even keep on experiencing our separate contents meanwhile. This all seems (at least) intelligible under the heading 'telepathy'.

²⁶ See Goff's paper, this volume.

The difficulty for phenomenal bonding comes not on the experiential content side, but on the subject side. We need not only to provide the new macrosubject with contents to experience, we are required to *manufacture* this macrosubject in the first place: the point of view for whom the contents are to be like something. And there's nothing in the sheer idea of phenomenal bonding that tells us how discrete subjects produce a new subject. What 'groups' those subjects' experiences together in a new phenomenally unified perspective, a new bounded field? Certainly nothing about having microsubjects already in play explains this. Each of the experiential packets—the contents—to be proffered to the novel subject belongs already to a point of view, and we are imagining those to remain intact on this *constitutive* model. Perhaps each content packet extended to the new subject carries with it (somehow) a 'quantum' of the subjectivity of its previous owner.²⁷ But then, clearly, we would simply end up with multiple perspectives bunched together in the new spot (the construction site of the prospective macrosubject), one for each packet of experiential content proffered by a micro-subject: for, surely, any 'quantum' of subjectivity implies a subject, so implies a perspective. We would then need, anew, to explain how these several perspectives ('subjective quanta') added up to a single unified one. The subject problem thereby respawns, which is the first sign of a nasty regress: nasty because we've made no explanatory progress.

iv. Chalmers attempts to put flesh on Goff's idea:

A natural candidate here [for the phenomenal bonding

²⁷ This sort of thing has been suggested to me by Pat Lewtas.

relation] is the co-consciousness relation: a relation such that whenever it relates two phenomenal states, they are experienced jointly. When this relation holds among the states of distinct microsubjects, those states will be experienced jointly by a new subject.²⁸

But this is to *describe* the (desired) outcome of a certain process, without telling us at all *how* it is meant to be achieved. Co-consciousness requires a subject: it's consciousness *for a subject* of some items. That makes *being co-conscious* relevantly like *being co-punched*, in that when two things are co-punched, we must ask: *by whom?* When we drag two experiential packets out of respective microsubjects, whence does the new subject come for whom they are to be co-conscious? To say that experiential packets are related now by co-consciousness is certainly to *imply* that a new subject has come into being for whom they are phenomenally unified, but it is not to tell us how this happens, nor whether it is possible—the things we wanted to know. In the absence of further positive content, what this notion of phenomenal bonding really amounts to is a *schema*: it specifies what an explanation of subject combination must achieve, without providing any of that explanation. It is a mere black box.

v. What if we try just to take phenomenal bonding at face value? We can readily enough imagine that when a number of microsubjects get into the requisite relationship—whatever it is—a macrosubject pops out of thin air. Thus phenomenal bonding, somewhat by stipulation, might supply the *necessitation* of a macrosubject: what was at issue in the subjects-summing argument. With phenomenal bonding added to the account, and so to the background of one's

²⁸ Chalmers, this volume, p.XX.

conceiving, one might then no longer be able to conceive of a set of subjects getting into the prescribed relationship without a macrosubject forming. But the glaring truth about this 'explanation' is that the fact of the phenomenally-bonded ingredients' being *subjects* plays no role whatever. All the work is done by the phenomenal bonding relation: it is a relation such that, by definition, it generates a macrosubject. It seems that we could as well imagine panqualityist-style *subjectless* qualitative patches as our ingredients, and posit a bonding relation such that they not only pooled sensory contents, but generated a subject to experience these. We could then talk, with Chalmers, of 'a relation such that whenever it relates two [panqualityist] states, they are experienced jointly...by a new subject.' It sounds just the same: there is as much—as little—explanation of the constitution of the novel subject on both accounts.

So even if phenomenal bonding could fill the lacuna around necessitation that looms large in the subjects-summing argument, it does nothing as yet to tell us what the explanatory role of the panpsychist's microsubjects is. Thus far, the intended role of subjects in the constitution of a subject is entirely opaque. That is the really deep problem for panpsychism: What is the principled motivation for positing microsubjects in the first place, just what explanatory work do they do? The fact that we are tempted to appeal to phenomenal bonding shows that panpsychists lack an answer to this question.

vi. What then would a good panpsychist explanation of 'phenomenal bonding' look like? It's informative to consider the case of atoms bonding into molecules. Relations do a lot of work there; for instance with the oxygen's sharing of the

hydrogens' electrons in the formation of water. But the important point about such relations is that they visibly *flow from* the intrinsic natures of the *relata*. This is generally the case with relations, in fact.²⁹ It is because of the relative looseness of hydrogen electrons, coupled with the convenient gap in the oxygen's outer shell, that electron sharing happens so readily in the constitution of water. For phenomenal bonding to work, we would need some analogue of this sort of explanation. It would be taking into consideration the intrinsic features of microsubjects that suggested to us the mechanism for their phenomenally bonding—a subjective equivalent of electron-sharing. The case with subjects is in reality exactly the reverse: it is because panpsychists *cannot* see how subjects could come together, given their intrinsic properties, that the supplement of phenomenal bonding is broached. We have here a relation devised precisely to remedy the obvious defects of its putative *relata*. This is bad news for panpsychism: it strongly suggests that microsubjectivity is (at best) explanatorily irrelevant to the constitution of macrosubjects, which in turn rules it out as a fundamental posit, according to (**).

vii. My diagnosis of panpsychism is as follows. It becomes tempting thanks to the admitted starting power of the intuition that *from ingredients lacking entirely in subjectivity, we could not a subject produce*. However, panpsychists are guilty of sliding from this thought, to the doctrine that *if we just add subjectivity to our microingredients, all will be well*. Yet this transition is clearly unjustified, as it stands. For it may be that, even were the starting thought correct, it would not help to add subjectivity to our base. That is in effect what is demonstrated by the

²⁹ Jill is taller than Bob thanks to their intrinsic properties; and so on.

dialectic above, and the resort to phenomenal bonding: the posit of fundamental subjectivity as an intrinsic property of ultimates has yielded no progress in our attempt to account for macrosubjects.

The panpsychist's starting intuition, concerning the impossibility of deriving subjectivity from the non-subjective, runs up against another intuitive principle, which seems at least as powerful: that subjectivity, far from being a diffused sort of 'stuff' or generalised property, inevitably comes in the form of certain quanta, namely *subjects themselves*. The self-contained nature of these quanta, their phenomenal unity and boundedness, makes them singularly unsuited to the constitution of any further entity.³⁰ So while panpsychists suffer the intuition that subjectivity *must be there* in the microbasics, the form in which it unavoidably occurs, packaged as subjects, at once blocks the hoped-for explanatory payoff. Panpsychism is thus crushed between two irreconcilable intuitions.

It seems these two intuitions cannot both be correct. Yet while it may be hard to envisage a subject forming from non-subjects, the idea that subjectivity could exist somehow *in general*, as a blanket quantity—apt to being broken down and reformed, like dough—seems more obviously incoherent. At most we picture a universe-subject when we think along these lines; but such an entity still has undeniably a point of view, and, as a corollary, creates a difficulty for the manufacture of subjects of our level. As long as the metaphysical solidity of

³⁰ In respect of their subjectivity, at least. People arguably form into larger entities such as crowds, senates and nations. But, as James notes (just after his famous passage about combining feelings) these alleged entities do not have a 'group mind' in any serious sense.

subjects is acknowledged—a driving factor behind panpsychism, of course—panpsychism cannot, it seems, succeed. Panpsychists would have to embrace emergentism, owning that, with the assembly and phenomenal bonding of microsubjects, ‘it just happens’ that a macrosubject forms. Of theorists who take this route, we may even more properly ask why they require the posit of fundamental subjectivity.

viii. Since microsubjectivity is at best an idle wheel in the explanation of macrosubjects, even on the most promising panpsychist account, it is not a posit we should go in for. This means a rejection of panpsychism. We should retain qualities in micro-ontology, but deny that they require subjects to experience them. *Panqualityism* has thus a more pared-down ontology, and the question is whether it is adequate to the phenomena. This theory faces still the other combination problems, as well as a new set of its own: it must generate subjects and awareness from ingredients lacking both properties. This appears, *prima facie*, a pair of new internal problems at least as formidable as the subject problem was for panpsychism.

III

i. Light of the subject problem, we’ve the following combination problems still in play: *the palette problem; the structural mismatch problem; the unity problem; the boundary problem; the grain problem; the production problem; the contamination problem; the incommensurability problem*. Additionally, we have a new *awareness problem*, which panqualityism faces due to stipulating that microquality

instances are not conscious.³¹

Isn't there also a new subject-related problem, of how subjects are constructed from non-subjects, for panqualityism?³² I don't think so, actually. For our purposes we may take a subject minimally to be an *aware entity*—anything that has conscious awareness. It follows that showing how there can be subjects, in the minimal sense, reduces to the problem of accounting for awareness.

The unity problem now splits in two: the *qualitative unity problem* is the same as, or will be solved in the same way as, the production problem. If we understood how quality instances tokened by distinct particulars could form into a combined single quality instantiation, it seems we would have given an account of how qualitative unities form. The unity problem for panpsychism concerned unity when there are multiple ultimate-*subjects* in play, with discrete unified fields of experience. We no longer have those subjects in play, only instances of quality belonging to different ultimates. There *is* a story to tell about how qualities separately instanced combine together into 'larger' and 'unified' qualities, but put this way the difficulty seems equivalent to the production problem. So qualitative unity and production problems appear close enough to be counted as one.

³¹ With panpsychism and its microsubjects now out of the way, it's worth recording, as regards the broader argumentative context, that regular physicalism faces all these combination problems (the question of how qualities combine must be faced sooner or later, at micro- or macro-levels) *plus* the problem (surely insurmountable—see Coleman 2015) of manufacturing qualities out of the non-qualitative. It follows that even if we can make no decent progress here with panqualityism's problems, it is in at least as good shape as regular physicalism; really much better shape, once one takes in the irreducibility of qualities.

³² Cf. Chalmers, this volume p. 6.

The sense of 'unity' operative in the unity problem for panpsychism is *phenomenal unity*, the unity of the experiential contents *given* to a single subject. All the elements I experience can be grouped together phenomenally in what we can call my 'overall experience'. They are also separated phenomenally from the elements you experience. The challenge of accounting for these features hasn't gone away. When we come to the panqualityist mechanism for awareness, we'll see that it can naturally be used to account for the *phenomenal unity* and *boundedness* of macrosubjective experience.

ii. The production/qualitative unity problem: How do separately instantiated qualities (e.g. the redness and whiteness of distinct particulars) yield a combined quality? If there is a genuine problem here, then we perhaps need to reject the premise that the qualities are separately instantiated, or remain separately instantiated. Chalmers sees no problem with co-instantiated qualities combining. So if separate instantiations can become non-separate in the combination of the qualities, we may have a solution. Chalmers discusses a 'quantum holist' picture where two or more ultimates can get entangled, gaining properties that then entitle us to treat them more or less as one item. Now suppose that two ultimates presently unentangled instantiate red and white, respectively. Then it might be reasonable to consider them, once entangled, as instantiating pink: the ultimates entangle, and so do their qualities. You can no longer take a red and a white 'reading' separately, as it were; rather the two qualities now have to be treated as a block. Some even interpret entanglement as the two (or more) entangled

things literally becoming one thing.³³ If that's plausible, then the formerly separately instantiated qualities—redness and whiteness—are now co-instantiated, and the puzzle appears solved.³⁴

Chalmers raises two major concerns about quantum holism, for panpsychists.³⁵ First, entanglement might be taken to unite the whole universe—especially since it likely emerged from a singularity.³⁶ This, in the context of panpsychism, would lead to a single universe-sized subject, and the *decomposition problem*: how do you get from that universe-subject down to us?³⁷ Second, Chalmers writes that ‘The structure of the quantum state of brain-level systems is quite different from the structure of our experience.’³⁸ This seems to be a bridging problem, a *quantum structural mismatch problem*. I have specific things to say about structural mismatch later. But for now we can observe that these two problems are significantly diminished without panpsychism. Panqualityism plus quantum

³³ This provides a neat means of removing apparent action at a distance (not to mention apparently instantaneous—so faster than light—effects!) when entangled particles are very far away one from one another.

³⁴ Chalmers seems to see separate instantiation as a bar to combination. We may remove this via entanglement, without going so far as to say that entanglement is *all it takes* for such combination. We may want to keep entanglement (or co-location) as a necessary but not sufficient condition, so as to avoid anything that is entangled instantiating only a single quality—for instance the entire universe, if this is wholly entangled with itself.

³⁵ Chalmers sees the possible utility of quantum holism for panpsychists like this: ‘If subjects’ experiential fields could be *identified with* physical quantum wholes—large physical fundamental states—this might remove the need to account for them combinatorially.’ (XX). Though not a combinatorial panpsychism, Chalmers still counts this a constitutive Russellian variety (p. 15).

³⁶ All portions of matter would then have all been entangled from the start, plausibly remaining so no matter how far apart everything subsequently drifted.

³⁷ This challenge aside, I think William James revealed *cosmo-panpsychism* as incoherent. Assuming our reality as subjects, we are on this view phenomenal components of the universe-subject. It follows that the universe-subject is conscious of all the things you and I are conscious of. Yet I can, for example, *sincerely wonder* what you’re thinking. The universe-subject cannot *sincerely wonder* what you’re thinking, though, since it already knows (by feeling) what you’re thinking. So it seems my sincere feeling of wonderment cannot, after all, be a phenomenal component of the universe-subject, as against the initial supposition. I believe this clever argument is in *A Pluralistic Universe* somewhere, though I can no longer locate it.

³⁸ This volume, p. 18.

holism won't imply a universe subject, because ultimates aren't subjects, on this view, so their entanglement doesn't imply ever-bigger subjects. What entanglement might imply instead, under panqualityism, is a universe-wide *entangled web of qualities*. The universe could be conceived of as an enormous enqualified fabric, with each quality instance being deeply related and entwined with all the others.³⁹ The quality of a given co-ordinate in that web to some extent supervenes on what qualities are present at all the other co-ordinates, so yielding a massively holistic qualitative universe.

We can achieve this result thanks to a difference in how the panqualityist is employing entanglement here, as compared with the quantum holist panpsychist. That panpsychist utilises entanglement as the mechanism of subject combination. All we are doing is using it to overcome the obstacle of separate instantiation that Chalmers sees as blocking quality combination. When qualities are to combine their bearers plausibly have to be entangled, we may say. But we can frame this as a necessary but not sufficient condition of qualitative combination. This means that not every entanglement entails the production of a single unified quality. So if the whole universe is entangled, we needn't say that it instantiates but a single quality. Of course, we will need at some point to speculate as to the physical mechanism that, together with co-location, effects combination. But note that we have now moved from an internal problem—how could separately instantiated qualities combine? (answer: they are not separately instantiated, in the relevant sense)—to a bridging problem: what is

³⁹ Lee Smolin has suggested that the varying qualities we experience correspond to energy fluctuations: in a panqualityist context, this suggestion can naturally be expanded to take in the whole universe, with the fluctuations construed as its aspects.

the physical analogue of quality combination? Since bridging problems are less urgent than internal ones, this represents a modicum of progress.

Because panqualityism, unlike this quantum holist panpsychism, doesn't envisage the structuring or entanglement of ultimates to constitute the structuring of consciousnesses into larger conscious wholes, the scope and structure of our experiential fields is an issue that floats to some degree free of questions about the more basic structure of the physical universe. The panqualityist has one job explaining how microqualities combine, and a separate task to account for consciousness of qualities, plus the unity and boundaries of macroconsciousness. This unburdens the panqualityist of the universe-subject worry. But it also means there's no problem that the quantum structure of a brain doesn't match the structure of experience. By hypothesis, something extra is needed for experiences—a.k.a. awareness of the qualities—and the panqualityist could aim to manufacture an awareness relation that operates on entangled groups of ultimates at the *macro-level*, and at the same time structures and defines the experiential field. This would amount to a panqualityist macroscopic 'cutter' of the brain-level or universe-level entangled quality-web, slicing in just the right places to yield fields of qualities corresponding in scope with those of our conscious acquaintance.

iii. Before investigating that cutter, I want to address the contamination problem. We can make sense of red and white sensory qualities adding up to pink, I suggest, in just the sort of intuitive way that we understand that if we mix a red and a white dab of *paint* we'll get a pink dab of paint in that spot. We're in the

business of building a *constitutive* model of macroexperience, so we want to be able to say, of the pink quality, that its pinkness at a time is nothing but the redness and the whiteness, and their relationship, which requires in turn that these qualities survive in the whole. Clearly they don't survive as they were before, in separated form. Now that their particulars are entangled, the qualities are in a sense co-located. We can think of the qualities as surviving in their *contributions* to the pinkness, as in a sense the spin (etc.) of entangled particles survives from pre-entanglement as an aspect of the novel state.⁴⁰ Analogously, distinct physical forces are present in complex real-life situations as the contribution each makes to the result. Intuitively, if you *were* able to remove the red quality from the blend, you would no longer have pinkness, and likewise for the white: so they are still present. Have the red and white survived with their qualitative identities intact? Yes: that's the only explanation of the ongoing fact that we have *this pink*. It takes precisely this red and this white to make this pink. But still, you can't find red on its own—or white for that matter—given their conjoint state.

If this is cogent, then we have an intuitive model for the constitution of qualities by other qualities,⁴¹ and a picture of how qualities 'contaminate' their wholes. They are still present, even though—in our example—as elements of a newly-formed pinkness, red and white are now in a sense more dependent on the

⁴⁰ This apparently clashes with Chalmers' reading of entanglement, or at least, the one he offers the quantum holist panpsychist, whereby the new state wholly supersedes the unentangled elements. I'm more inclined to construe the latter as helping to constitute the new entity. A physicist friend tells me that (e.g.) entangled electrons survive in the new state somewhat 'like sausages and potatoes in toad-in-the-hole'. This makes sense, though I didn't know that toad-in-the-hole had potatoes. Thanks to Paul Cook for discussion.

⁴¹ Which neatly parallels—even helps us perhaps to visualise—corresponding microphysical operations.

entangled whole. Notably, then, while we couldn't intelligibly make subjects constitute other subjects, we can intelligibly make qualities constitute other qualities. This represents panqualityism's essential advance over panpsychism.

iv. This line of thought raises the palette problem—how can we derive the masses of macroqualities just by blending a few micro-qualities (even if we understand the blending)? For a start we can note that this bridging problem takes a certain non-compulsory view of the scientific picture. It's true that if we concentrate on conventional microphysical quantities like mass, charge and spin, there don't look to be many slots available for qualities. Even if we ruled that it's particle types which each possess a distinctive kind of quality, that won't get us terribly many determinates. Given that we're likely to discover more particles, we can expect that number to increase somewhat. Another move is to consider matters in terms of string theory.⁴² Strings can potentially vibrate in infinitely many ways, and perhaps each vibration corresponds to a different quality.⁴³ There'd be room then to include olfactory qualities, colours, etc. *all* as having basic instantiations. There would still be much to do to work out how they combined, but the *numerical* challenge of Chalmers' palette problem wouldn't seem so pressing.⁴⁴ Anyway it's not clear how pressing that challenge is, even

⁴² Or something like Bohm's idea (1980) of a much finer-grained fundament of entities and properties beneath the quantum mechanical level currently considered basic.

⁴³ Again Smolin's suggestion about quality correlating with energy fluctuations comes to mind.

⁴⁴ On string theory Lockwood says: 'it seems incomprehensible that different combinations of collective or individual string states could generate the qualitative diversity that is manifest at the phenomenal level. It seems inconceivable in much the same way, and for much the same reasons, that it is inconceivable that an artist, however skilled, should conjure the simulacrum of a Turner sunset from a palette containing only black and white paints.' (1993: 276) This remark is puzzling from the standpoint of a mere worry about the *number* of slots available in the microphysical realm for qualities, given the range in which strings can vibrate. This suggests that the real worry as regards the micro-palette and 'diversity' concerns *incommensurability*. See below.

within the constraints of a few basic qualities. Given a few basic elements, these can clearly be combined in an enormous variety of ways: for any combination of one instance of each of the basic set, we can add a further instance of one of the basic members, presumably altering thereby the quality of the whole. In that way we can see there are potentially limitless places to go *merely* numerically.

v. This suggests that Chalmers' *palette problem* is in the end best understood as the *incommensurability problem*. Just what restricted set of microqualities is it that in recombination can yield now a pure blueness, now the smell of roses? We have perhaps gained some sense of how qualities can contaminate their products, but they must still contaminate them *as such*, as the qualities they are. The problem is that some macro-qualia are apparently so *unlike* some other macro-qualia that we can't imagine them having ingredients in common. This is the relevant sense of 'diversity': qualitative diversity.

I think the answer will require radical reconceptualisation of our quality-space: discarding the idea of discrete modalities, and coming to think of phenomenal qualities, of all kinds, as on a continuum, in the way we think of the colours. So just as it's possible to move across the colour spectrum in tiny, almost undetectable steps, it must be possible to move from tastes to sounds, sounds to colours, and so on, via equally tiny steps. Tiptoeing between modalities already seems *conceivable* in certain cases, perhaps even actual. We know that what we experience as 'taste' is really some kind of fusion of qualia sourced from the nose and from the tongue (to separate these just eat something while pinching your nostrils). Perhaps we don't routinely notice this because of the qualitative

overlap between olfactory and gustatory qualia. Again, sometimes a *thump*, especially experienced while falling asleep, is not clearly distinguishable as *felt* or as *heard* (it doesn't appear to be both)—overlap between tactile and auditory qualia seems intelligible. One thinks also, in this connection, of the experience of deep bass drumming. It even strikes me as plausible that tactile qualia are just (qualitatively) more 'forceful' or 'solid' counterparts of 'thinner' auditory qualia.

To address qualitative incommensurability we must stretch to conceiving of such continuities as the rule rather than the exception. Hartshorne ably defends this 'continuum hypothesis', and for want of space I refer the reader to his discussion.⁴⁵ Let me only mention here his helpful idea that, where two sets of our qualia stubbornly appear absolutely different (as perhaps with taste and colour qualia), this may be an artefact of a missing 'intermediary' modality that we lack (perhaps it is not evolutionarily useful for us to have it). So imagine that the qualia of the shark's electric sense are the missing modality in question: it would then be possible to stone-step from visual qualia to shark electric qualia through to taste qualia.⁴⁶

To further motivate the continuum hypothesis I offer the following small, hopefully suggestive, thought-experiment: Imagine a creature whose qualia-space featured only (what we would call) colours. Though possessing our five

⁴⁵ See Hartshorne 1934, especially the first half. Of particular note are i. his argument that it's possible for an auditory quale to be qualitatively closer to a visual quale than to another auditory quale (he compares a fife note to *silver* and to a *dull thump*) and ii. his clever discussion of synaesthesia as evidencing the continuum hypothesis.

⁴⁶ Objection: *If colours are like electric qualia, but colour qualia are unlike taste qualia, then electric qualia cannot be like taste qualia.* Yet we know that transitivity of similarity fails even among the colours.

external senses, their qualitative products in its consciousness would just be colours of different sorts, with no colour that features in 'audition' featuring also in 'vision', and so on. We can get some grip on this being's mental life by thinking about the way that heat—thought of primarily as a tactile quality—can feature in visual experience as red or orange. Now we just have to imagine that the creature, in touching a warm surface, experiences these visual qualia *only*, instead of the tactile ones we feel.

Plausibly this creature would come to conceive of the qualia corresponding to its various senses, what for us would just be different kinds of colours, as qualia belonging to irreducibly different 'modal spaces'. This would seem the likely result just as long as no particular colour featured in more than one modality. We can imagine that the creature's tactile sensations are all varying shades of blue, vision presents only reds, smell the greens, and so on, with the places where these qualities (for us) overlap conveniently screened out by the organism's evolution, to prevent confusion (just as we might hypothesise that we helpfully screen out certain overlaps between the qualia of our various 'modalities'). The distal stimuli, as well as the different transceivers by which we absorb signals from them, are all too apt to contaminate our conception of the qualia they elicit, generating misleading impressions of absolute difference. Perhaps a being with a qualia-space correspondingly greater than ours as ours is greater than the colour-only creature, would conceive of human qualia as belonging to a single 'modality'.

If the continuum hypothesis is correct, then there isn't any genuine

incommensurability between different kinds of qualities—differences are always of degree rather than of kind. We might well *think* there are incommensurables, because we lack some areas of quality-space that would join up the qualities in question. It is not inconceivable, then, that just as (I believe) we could entertain the idea of a basic set of colours that in recombination could get you to all corners of the colour spectrum, there might be an ‘intermodal’⁴⁷ quality set that could take you to all corners of qualia-space as we know it, and beyond. We will then understand qualitative identity and difference in terms of the numerical identity or difference of these underlying components. The qualities required to do this job are likely not directly conceivable for us, being as they must lie ‘in between’ all the qualia we know of (they are present in our qualia only as so many myriad trace contributions). But I have some hopes of a genius who will figure out how we may *qualitatively deduce* them, by triangulation from the qualities of our acquaintance.⁴⁸

vi. What of awareness? I favour a higher-order thought theory, where a HOT’s suitably representing a sensory state constitutes that state’s being conscious.⁴⁹ We might envisage a panqualityist world, a web of qualities, with the HOT systems in brains, by representing other bits of these same brains, enabling consciousness of certain tiny portions of the material universe. Rosenthal’s notable insight regarding consciousness is that a conscious state is one the

⁴⁷ Though the ultimate suggestion is of course that we drop the modality-based conceptual scheme if possible.

⁴⁸ Although it may be that some of the macroqualities we know of are *also* fundamental—but which ones and how to tell? Work to be done. I’ve written a little more about the deductive project mentioned here in Coleman 2015, but we await the genius.

⁴⁹ Thus I don’t find the objections to HOT theory mentioned in section I persuasive: no room to explain why, however. Rosenthal is also undaunted by the objections.

subject is aware of being in. This awareness is plausibly captured by the notion of mental representation of the conscious state, which swiftly leads to something like HOT theory.⁵⁰ What the panqualityist incarnation has as advantage over conventionally physicalist HOT theory is the unreduced presence of qualities—thus it has no need to account for the generation of qualities from the non-qualitative, nor to eliminate qualities (as is, arguably, the practice of conventional HOT theory and its kin). The HOT component of panqualityism is (almost⁵¹) solely charged with producing *subjective awareness* of qualities. In section IV I tackle the abiding sense that a HOT-based account is not up to even this task; for now we leave the issue of awareness behind.

vii. This *HOT panqualityism* has the resources to treat the unity and boundary problems. Now, if one's qualitative states were made conscious by a *set* of HOTs directed at different elements, there would, as Chalmers notes,⁵² occur a problem as to how these qualitative elements became phenomenally unified—experienced together. It wouldn't follow from having this thought, and that one, about different qualities, that we had any thought about both qualities together. Yet we're conscious of all and only what HOTs target. So we'd get no unified qualitative consciousness as a result. The solution is to posit a single *very big* HOT for each of us, at a time: a complex thought taking in all the qualities we're synchronously aware of, perhaps a big conjunctive thought. Then we'll

⁵⁰ There are theories which make the higher-order representation more like perception than thought (see e.g. Lycan 2004). There's also a self-representational view like Kriegel's (2009), where the conscious state and the state that provides awareness of it are more tightly bound—into the same metrological complex in fact. I prefer HOT theory for reasons explained elsewhere.

⁵¹ See the next three subsections for a wrinkle on this claim.

⁵² Bayne and Chalmers 2003.

experience all the relevant qualities together, and we have unity.⁵³

We also have *boundaries*: your HOT covers a certain range of qualities in *your* body, and those are the ones of which you're conscious. Mine does likewise for a set in *my* body, which your HOT does not target: this is a simple matter of physiology. The relevant HO representation will likely require a non-trivial amount of neurological integration between representing and represented states.⁵⁴ This ensures I can no more HO represent your sensory states than I can digest the alcohol you consumed last night. These states of yours are simply out of my reach. Since we are each conscious of all and only that which our respective HOT systems target, we'll get two separate, bounded, unified fields of consciousness, on this model.

If we envisage a universe-wide web of qualities, really one structured field, then the HOT systems we bear are *cutters*, chopping, in each case, a defined patch out of the overall web and producing awareness of it; hence generating subjects—*loci* of awareness, each at the center of (i.e. phenomenally *given*) a bounded field of qualities. Panqualityism deals with the qualities of which we're aware; the HOT component, as well as providing awareness at all, fixes the experiential field and its properties, like boundedness. It's all too tempting to compare the HOT systems to *spotlights*, illuminating minute areas of the panqualityist universe.

⁵³ James 1890: 158-9: 'the sum [of experienced qualities] itself exists only for a bystander who happens to overlook the units and to apprehend the sum as such'. The bystander I propose is a HOT. Being appropriately related to a suitable HOT could perhaps be understood as a panqualityist version of a phenomenal bonding relation (after Goff 2009 and Chalmers).

⁵⁴ See Kriegel 2009 Ch. 7 for well-informed speculation about the kind of neurological integration likely required.

viii. If the universe is a continuum at the microphysical level, this permits a considerable amount of graininess at the macrophysical level nonetheless. A neuron, for instance, will on the field conception show up as a node, or massive *knot*, in the universe's quality-fabric. Though *ultimately* continuous with its surround, such a node can be treated for certain purposes—like those of measuring its electrical potential—as an isolated unit. Neurological accounts are framed in terms of the commerce among such units (together forming *circuits* and systems). So even in the panqualityist universe there remains a job to square this macrophysical graininess with the smoothness of experienced qualities, especially given the apparent importance of neuronal level goings-on to consciousness.⁵⁵

Rosenthal suggested several years ago that HOT theory might assist with the grain problem:

‘The mental properties of our sensations appear ultimately homogeneous to us simply because the way we are conscious of them [i.e. the HO representation] smooths them out, so to speak, and elides the details of their particulate, bit-map nature.’⁵⁶

With a HOT and sensory state in play in a given case, the subject's awareness is effectively placed at a little distance from its object. This creates just the space we need for a small appearance/reality gap. Without going so far as to declare

⁵⁵ Though Sellars (1963: 37) seems open to the idea that ultimate homogeneity might by itself be enough to finesse the grain problem. In this case, the appeal to HOT theory below is not needed. It will still find gainful employment helping with structural mismatch, however (next subsection).

⁵⁶ 1999: 345

that the state one is conscious of in reality lacks qualities,⁵⁷ we have nevertheless the room to say it perhaps lacks the (macro-level) smoothness it appears in consciousness to possess. Thus the grain problem is finessed: we might claim that there is discontinuity at the macroexperiential level which does not show up in awareness thanks to the ‘clumping’ or smoothing effect of HOTs. This could work, in part, as follows. We are conscious of all and only that which our HOT targets. Thus if the HOT selectively targets discontinuous, even widely-distributed, brain features, we will be conscious of these *without the gaps*, since the gaps are by hypothesis *not* targeted, hence not represented. Being conscious of these items without the gaps between them is to be conscious of them in a continuous field. Analogously, widely spaced TV cameras, focusing on distinct parts of a scene, supply a spatially continuous image on the television screen. What is not dealt with by this explanation is the microphysical grain *within* (in the constitution of) a given macrophysical brain portion (e.g. neuronal-activity node): why are we not conscious of its microqualitative texture? Perhaps this is a matter of the relatively low ‘resolution’ of HOTs.⁵⁸

So, although Lockwood avers that ‘no literal sense can be attached to the notion

⁵⁷ This move becomes tempting to more mainstream materialists, once the idea arises of a mediating representational mechanism in introspection or consciousness. The first half of Pereboom’s 2011, for instance, toys with the idea that our phenomenal concepts are *wholly* deceptive, representing to us in introspection qualities that nowhere obtain. Yet how the content of such representations could be supplied is left unexplained. Against this view I juxtapose Sellars (1963: 30): ‘we have taken them [qualities] out of our world picture altogether. We will have made it unintelligible how things could even *appear* to be coloured.’ See also Coleman 2015.

⁵⁸ Or it may be that, taking note of the earlier model of qualitative combination, the constituting qualities of a given node exist now only as contributions to a whole which has taken the metaphysical upper hand. In this case, while the whole is in being, the composing qualities are only implicit within it, as regards their original form, and are not there literally to be observed or experienced, in this form. I leave this thought hanging, as it is not clear to me. It has obvious connection to Sellars’ line of thought in note 56.

of the conscious mind being distanced, in this fashion, *from itself*,⁵⁹ we can on HOT panqualityism in fact stand to the brain's structure (in consciousness) somewhat as one does in viewing a newspaper photograph:⁶⁰ we perceive not the 'dots', only the image.

ix. Structural mismatch seems susceptible of similar treatment. Lockwood may be right that 'what is ostensibly lacking...is even the most approximate isomorphism between states of awareness and the underlying physiological goings-on'⁶¹. But on HOT panqualityism, the requisite mirroring is not between what we are aware of and brain structure *simpliciter*, but between the HOT mechanism *along with* the sensory percept it carves up, and brain structure. Given a relatively 'raw' qualitative feed from the sensory systems, the HOT mechanism's job is to complete the preparation of a percept fully ready for presentation to the subject (in awareness), and fit for the task of negotiating the world. It's no surprise, given an environment of significant medium-scale dry goods (threats, food, etc.), that the HOT system should have evolved to 'gloss over' (in Lockwood's phrase) the complexity, and amend the structure, of the pre-conscious raw qualitative feed; all in the cause of helpful isomorphism between the conscious percept and the subject's *environs*, not her brain.⁶² This

⁵⁹ 1993: 278. Cf. Foster's (1991: 127) talk of 'distance' from what is experienced. Foster doesn't claim that taking such a distance is impossible, however; his main difficulty for Russellianism is what I have called the *incommensurability problem*.

⁶⁰ This is Lockwood's analogy, which he claims does not carry over to the mental case (1993: 277-8).

⁶¹ 1993: 274. Chalmers says 'the macrophenomenal structure of my visual field is prima facie very different from the macrophysical structure of my brain' (xx)

⁶² Feigl (1958/1967: 91) also discusses this sort of proposal, attributing it to Carnap: 'it would have to be assumed that one area of the cortex "taps" or "scans" other areas...Likewise, one would have to assume that the effect in the second [scanning] area reflects only certain gross

corresponds, effectively, to Chalmers' suggestion that the sought-after mirroring between experiential field and brain structure is at the *informational* level. The proposal is in the spirit of Lockwood's observation that a functionalist account might have the wherewithal to abstract from the nitty-gritty of physical implementation when determining the structure of the conscious field. Lockwood dismisses the proposal because 'Functionalism may have some plausibility in accounting for mental structure but, on the face of it, fails utterly to account for phenomenal *content*.'⁶³ Yet this objection doesn't touch two-pronged *HOT panqualityism*, the right wing of which supplies qualitative content in unreduced form. The functionalist (HOT) unit swoops in only to supply, and regiment, awareness of this qualitative feed.^{64, 65, 66}

x. One's natural next thought might be to wonder whether panpsychists could avail themselves of this useful HOT apparatus. Indeed they could. Panpsychists

features of the intricate and multifarious process patterns in the first...the second area...corresponds to the sensing of raw feels'.

⁶³ 1993: 275.

⁶⁴ Lockwood arguably leaves consciousness open to such a flanking manoeuvre: he says functionalism must fail 'at least if put forward as a *global* theory of mind.' (1993: 275, my emphasis).

⁶⁵ Chalmers (this volume, p.5) also thinks the structure of the modalities is a source of structural mismatch, but I've rejected the ultimate reality of that structure: I think it might well dissolve upon ideal refecation.

⁶⁶ Chalmers identifies another troubling aspect of the structural mismatch problem: the notion that, given Russellianism, qualitative and physical *property structures* would have to match up. For example: 'if mass has a scalar structure, the associated [quality] (what plays the mass role) has a scalar structure. If charge has a binary structure, the associated [quality] (what plays the charge role) has a binary structure', this volume, p. 14. I have to admit to being bamboozled by this impressive difficulty. If there is a manifest structural clash here—at the moment I struggle to see whether there is or not—then my obvious remedy is to invoke the HOT apparatus again. Perhaps this ensures that the property structures we *experience as* belonging to qualities are somewhat artificial (the product of the HOT filtering process in preparing a percept). Unscreened, qualities perhaps have the structural properties of physical properties. Whether anything like this would work I don't know. This is a very interesting problem indeed. I wonder how the matter would appear if we tried to match microqualities to individual vibration states of strings: would that produce any structural clash? Like a string, I wave in the breeze here.

must anyway invoke some kind of special relation among sets of ultimates, superadded to their property of consciousness. For a panpsychist must explain—an underappreciated problem—why subjects are bounded as they are: we do not presumably experience all the conscious ultimates within our bodies; and even if we did, panpsychists respect commonsense ontology enough to carve us (human subjects) off from one another experientially. The panpsychist must therefore posit some relation that all and only the conscious ultimates comprising *my* consciousness stand in, likewise for *you*, and so on.⁶⁷ What's to prevent panpsychists adopting the HOT mechanism in its capacity as 'cutter'? They might then also help themselves, it appears, to whatever power this supplement possesses when it comes to the grain and structural mismatch problems.

Yet this move promises more harm than good for panpsychists, for it serves only to underscore the essential idleness of the posit of fundamental subjectivity. Having ultimate-*subjects* in play is thus revealed as doing nothing to help with understanding *either* the constitution (see section II), *or* (now) the structuring of a macro-subjectivity. Worse, in turning to the HOT mechanism to treat grain and structural mismatch, the panpsychist even outsources some of her account of the *phenomenal* state of macrosubjects. Theoretically more elegant panqualityism simply has the sort of relation a panpsychist might appeal to here do double duty for awareness. All that remains of panpsychism, by now, is the plaintive cry that *without microsubjectivity we could not generate macrosubjectivity*. But, as we saw,

⁶⁷ It may be tempting, but it would be no less question begging, to say the relation is *constitution*: that the ultimates you are conscious of are the ones that constitute your conscious mind. The whole question is in virtue of what do these conscious ultimates not also constitute mine. Goffian phenomenal bonding, at least as presently understood, is of no help either: to say a certain set of ultimates are phenomenally bonded is to say that they are the ones co-conscious for some subject; this is just to *describe* the state of affairs that requires *explaining* in independent terms.

this thought is a dead end: the addition of microsubjectivity did not help in accounting for macrosubjects.

IV.

i. The foregoing discussion suggests the potential value of HOT representation, in combination with panqualityism, when it comes to treating some of the more intimidating combination problems.⁶⁸ But this promise is for naught if there's reason to think that awareness cannot be analysed by higher-order thought. The slippage between sensory states and awareness provided by the HOT mechanism, and the structuring it offers of the contents of awareness, appear conditional on HOTs sufficing for awareness in the first place. But Chalmers avers that any such attempt to 'functionalise' awareness must fail, since it will face its own variety of zombie.

The relevant zombie argument starts from a panqualityist world-description: a quality web, including (or implying) the functional structures in brains that implement HOTs about the qualities in somatosensory cortexes. We would entertain all of this, yet find we could still conceive that the creatures thereby described lacked awareness of the qualities in their brains. Conceivability entailing possibility, this means the failure of HOT panqualityism. Perhaps the theory can get qualities into the sort of order to match what we know, but it

⁶⁸ Lockwood maintains that 'there are no distinctively introspective meta-mental representations...whose separation from their mental objects could help us resolve...the grain problem' (1993: 278). Aside from the reference to introspection—HOTs do their representation in 'first-order' consciousness—this is the gist of the present HOT-based proposal: I've no idea why Lockwood rules it out. His claim appears to be an empirical one.

cannot account for our *awareness* of qualities. Note well: we should distinguish this argument from the standard zombie argument concerning *phenomenal consciousness*. That argument invokes zombies who lack sensory qualities *and* who lack also awareness of those qualities. In our case panqualityism guarantees that our material duplicates instantiate sensory qualities; what's allegedly missing is their awareness of these qualities. They are *awareness zombies*.

I will analyse and reject Chalmers' grounds for the claim that HOT panqualityism is threatened by awareness zombies. This leaves the positive motivations for the theory unobstructed.

ii. Why does Chalmers consider that panqualityist awareness zombies are conceivable? With standard physical zombies, who lack phenomenal consciousness, Chalmers emphasises that the physical consists of *structure and dynamics*. One is thus prompted to conceive of a pure structure-and-dynamics-world, and sure enough finds that consciousness needn't be instantiated. In our case the bit of supplementary theory, aimed to get us conceiving in the right direction,⁶⁹ is that:

'Awareness involves phenomenology, and there are good reasons to think that no mere functional state can constitute

⁶⁹ I'm not saying there's anything wrong with such prompting: to set up a zombie argument properly, *explanandum* and *explanans* must be made precise enough for the thinker to conceive informatively. If we are not told to conceive of the physical in terms of structure and dynamics, our conception of the physical is left too open-ended. That's plausibly why some people react to the standard zombie argument by saying it's inconceivable that all the physical stuff could be there without consciousness, since consciousness just *is* part of the physical stuff: they haven't had (or heeded) the prompt about structure and dynamics. It's very hard to imagine that consciousness *just is* structure and dynamics. Note that here the prompting primarily concerns the nature of the *explanandum* (awareness, that it has phenomenology) whereas with the standard zombie argument it primarily concerns the *explanans* (the nature of the physical).

phenomenology...one can conceive of any such functional state in the absence of phenomenology, and in particular in the absence of awareness.⁷⁰

The anti-HOT panqualityism zombie argument is thus to operate much like the anti-physicalist zombie argument—it hangs on a failure to reductively capture a certain phenomenology. In our case the missing target is narrower than *phenomenology in general*—the target of standard zombies. Chalmers apparently holds that, in addition to being aware of sensory qualities, we're *aware of our awareness* of sensory qualities. This further object of awareness—awareness itself—comes with its own patch of phenomenology: a qualitative feel. It's this feel which our HOT-panqualitative duplicates are alleged conceivably to lack.⁷¹

It might seem an odd move to press the lack of a certain qualitative content against panqualityism. At this point in the dialectic, couldn't the panqualityist reply just by building the allegedly missing qualities into our, hence our HOT-panqualityist duplicates', constitution? Not quite—for recall that the HOT-panqualityist position is that awareness is supplied by higher-order thought. It follows that if specific sensory qualities attach to awareness, these must be provided by the HOT component of panqualityism. And a HOT is avowedly a 'mere functional state'. So Chalmers' objection is well founded.⁷²

⁷⁰ This volume p. 24, my emphasis.

⁷¹ Interestingly, then, this argument doesn't seem directly to concern the irreducibility of awareness *as such*. Rather, the idea is that awareness necessarily comes with a phenomenal complement. Since the complement is unanalysable, awareness must also be unanalysable, as the complement is bound up with it. See also the next note.

⁷² Still, one might wonder just why Chalmers proceeds *via phenomenology* in this way. Why does he not simply claim directly that awareness isn't functionalisable? The answer is that zombie scenarios depend on there being a sensory quality 'toggle' between the actual world and putative

iii. I believe the objection fails, however. It's true that *if* awareness had phenomenology, then this, like sensory quality in general, would be hard to functionalise.⁷³ But I deny that mere awareness has phenomenology.⁷⁴

That awareness might lack phenomenology doesn't appear terribly surprising, when considered as a general matter: It is via awareness that we encounter sensory qualities and the appearances of things, but why should the faculty that presents sensory qualities to us itself make some appearance among our sensory

zombie world. One conceives of the relevant 'zombified' property by conceiving of the absence of its associated sensory qualities (e.g. zombie water is H₂O without waterish sensory qualities, zombie heat is MKE without heatish sensory qualities; the thrust of the standard zombie argument is that removal of its associated sensory qualities amounts to removal of the *very property* in the case of phenomenal consciousness). It's not possible to construct a zombie scenario without framing the target or *explanandum* in sensory quality terms, in fact (this is also true of the *explanans*, but showing why that is would take us too far afield). It follows that any item not associated with a set of sensory qualities is not a valid target for a zombie argument. Setting aside its structural impact on the experiential field, which should be deducible from the brain's functional structure, awareness is one such item, I argue below. However, this excursion into the general mechanics of zombie arguments is not needed to block Chalmers: his present anti-panqualityist argument depends on the explicit claim that awareness has phenomenology; in the interesting (i.e. not-merely-structuring) sense, I deny this.

⁷³ In fact my diagnosis of the standard zombie argument is that it depends much more on the elusiveness of qualities to functionalisation, than it does on the elusiveness of sheer consciousness (a.k.a. awareness). There is evidence for this in how the argument is sometimes put. Churchland (2014: 37), for example, describes zombies as our physical duplicates, 'whose subjective *qualitative* mental life is simply absent'—significantly, he doesn't mention consciousness at all in setting up the zombie challenge to physicalism. This point is implicit in Byrne 2006. See also previous note.

⁷⁴ In the sense of being associated with sensory qualities—it has no 'feel'. We did admit (III, viii-ix) an *impact* of the HOT mechanism on our sensory qualities—for it has a 'smoothing' and structuring effect. But these structural aspects of our phenomenology, I maintain, ought to be recoverable from details of the HOT system's interaction with its sensorily qualitative target among our brain tissues—these explanations would be on a par with those which might be given of the boundedness and unity of our HOT panqualityist duplicates' experiential fields, also via the HOT mechanism. While the functional HOT mechanism cannot *manufacture* sensory qualities, as Chalmers rightly points out, it is able effectively to *corral* and to *filter* existing sensory quality instances (to use a metaphor, though HOTs can mould the clay they're given, they cannot produce the qualitative clay itself). We thus do not get any zombie-susceptible aspects of phenomenology. *N.b.* If he did not (at least implicitly) accept that the HOT mechanism could be *a priori* connected to the structure of phenomenology, it seems that Chalmers could not have run the objection we encountered when discussing phenomenal unity: that multiple HOTs would prevent the unity of consciousness. In that objection, he infers from HOT-structure to phenomenological structure.

qualities?⁷⁵ That would be akin to the camera appearing in the periphery of every shot of a television show.⁷⁶ It seems that there at least *could* be creatures for whom awareness contributed no sensory contents. For them, consciousness would be completely ‘transparent’ to its first-order objects. *Prima facie*, therefore, it is an open question whether we are such creatures. We must examine the evidence.

iv. In claiming that awareness lacks phenomenology, I deny that we are aware of awareness.⁷⁷ Were we aware of awareness, we could expect such second-order awareness to have phenomenology,⁷⁸ and Chalmers’ strategy would be vindicated. A lot hangs on this issue: Chalmers seems to concede⁷⁹ that a deflationary account of awareness could combine with an ‘informational’ structuring of awareness to finesse such things as the structural mismatch problem. His objection to this strategy rests on the alleged difficulty of analysing awareness, which rests in turn on his claim that awareness has phenomenology.

⁷⁵ This is not the denial that awareness is real (the view Chalmers ascribes to James in his radical empiricist phase): of course we are aware of qualities. But we are, in the relevant sense (see note 86), unaware of our awareness of qualities.

⁷⁶ Or the eyes appearing in the visual field—cf. Wittgenstein in *Tractatus*.

⁷⁷ Lockwood says: ‘sensory phenomenology belongs, so to speak, to that tip of the neurophysiological iceberg *which projects above the surface of awareness*. We are to regard it as a part or aspect of the reality of the brain that is directly present to the conscious mind’ (1993: 282, my emphasis). My position is implicit here: sensory qualities project above the surface of awareness, but awareness itself need not so project. Strictly, we are not even aware of awareness (i.e. the HOT mechanism) *as* structuring our sensory field: for being aware only of the *effects* of some item is not the same as being aware of that item. As Kriegel says, something that structures phenomenology ‘makes a difference to the phenomenology—without being an *item in it*.’ (2009: 172).

⁷⁸ It seems that if we are aware of some *x*, then *x* is like something for us, in the Nagelian sense. That means in turn that *x* is associated with certain sensory qualities. How could we be aware of *x*—in the sense relevant to consciousness—without *x* being like something for us?

⁷⁹ This volume, pp. 29-30.

Faced with the claim that awareness has phenomenology, a sensible approach is to search for its quality in consciousness. Kriegel posits a distinctive, pervasive and diffuse 'feel' contributed by awareness to our overall field of conscious sensory qualities.⁸⁰ But he is no more specific than this, and I don't recognise the phenomenology in question from this description.⁸¹

Chalmers refers us to some examples of the phenomenology of awareness which he employs elsewhere.⁸² I understand, however, that he doesn't wish to hang too much on these particular cases, relying instead on what he sees as the plausibility of the general claim that we're aware of awareness. Accordingly I won't directly examine his examples; I'll only say that in each case where it is plausible that a distinctive phenomenology obtains, it's at least as plausible that it attaches (or is felt to attach) to the object of experience, or to things like qualia of mental effort, not to the manner of experiencing.

Some phenomenological reflection, for what it's worth (the difficulty of adjudicating this sort of dispute is inversely proportional with its proximity to

⁸⁰ See his 2009. Similarly, Chalmers talks of a phenomenal 'background acquaintance with our awareness' (2013: 5).

⁸¹ Gennaro (e.g. 2008) cannot locate the phenomenology of awareness either. See Kriegel 2009 Ch. 5 for an ingenious explanation of why the phenomenology is elusive to introspection. This explanation, however, does not help with the fact (as I see it) that the phenomenology is not felt in a first-order way, as it had better be. We don't—can't—*require* introspection to confirm the presence of all the qualities we're aware of. Is it only by introspecting my experience that I know I sometimes see blue? This seems an unnecessarily technical requirement to verify my occasional awareness of blue. And this, that introspection is required to confirm the existence of a sensory quality, is not something Kriegel can anyway say: for since the feel of awareness is said to elude introspection, yet Kriegel claims to feel this feel, these must be phenomenological data outside of introspection he's relying on. I don't have those data. All of which indicates, additionally, in my view, that something is seriously wrong with the prevalent talk of 'introspection' – I have come to lose more or less entirely my grip on what this operation is supposed, phenomenologically and mechanically, to comprise—is it much more than staring very hard at a wall while mentally muttering the inanity 'This is an experience'?

⁸² In his reply to Hellie's commentary on Chalmers' *The Character of Consciousness* (Chalmers 2013).

the raw experience; indeed one might have imagined disagreement impossible at this distance, but quite the contrary). In being aware of *red*, I just don't know what my alleged awareness of my awareness of red is meant to feel like; I find only the redness. When you ask me to attend to the relational property of *my being aware of the redness*, still all I find is the redness—I don't seem to enter the picture (in respect of that redness). Of course I *know* I'm aware of redness, since *there it is* for me, subjectively. Similarly, I know there's a camera shooting a television scene, although I can't see the camera, only its output.⁸³

I think, strange as it may sound, that we *infer* that we're aware, because there are qualities present to us subjectively. One feels the qualities, but not that which goes into one's feeling them. This addresses the challenge sometimes leveled against those who reject the awareness of awareness: *If we're unaware of awareness, how could we possibly know that we're aware?*⁸⁴ This is a strange question, however. We who reject second-order awareness accept awareness. Awareness is the subjective presence to one of qualities. Now, since we accept awareness, we accept that qualities are subjectively present to individuals. Those individuals, in noting the qualities of which they're aware, can make the trivial (though undoubtedly important) inference that they're aware.⁸⁵

⁸³ Or I know there's an eye because the visual field is apparent to me. In fact the relationship is tighter in the case of awareness than in these examples: if I am dreaming then the visual experiences I have do not (at that time) require an eye, at least not in the normal way. But if sensory qualities are apparent to me *at all*, that is because of my awareness.

⁸⁴ See e.g. Kriegel 2009 Ch. 4.3 for this sort of challenge.

⁸⁵ In Dretske's terms (see e.g. his 1999), we're *aware that we're aware*, but not *aware of awareness* – this is the distinction between fact awareness and object/property awareness. But mere fact awareness isn't what Chalmers has in mind in alleging a phenomenology of awareness – Dretske is clear that this kind of awareness is a phenomenology-free affair, in the sense that we can become that-aware concerning some fact just by reading about it. The *fact* about which we're thereby aware need communicate nothing phenomenologically. The (property) awareness of

v. Those who allege a feel to awareness are not making things up: they surely detect *something*, phenomenologically. The question is what it is that they detect. It seems a distinct possibility, for the skeptical, that they're misclassifying some more or less subtle feature (or features) of 'first-order' phenomenology. There are indeed some phenomenological factors with a tendency to confound. For instance, since one can infer that one is aware, there is the feel of the (pretty routine) conscious thought 'I am aware'. There is also the feel of 'self-awareness': the conscious sensory qualities associated with one's own body and mind (including the feels of prevailing emotional tenor, of bodily pains, of intentions, wishes, memories). Given these two items, it follows that one can *be aware of oneself as a thing that is aware*. Is there anything to the alleged sensory quality of awareness beyond this feeling? But this is not a phenomenology *of awareness*. It doesn't require awareness itself to be conscious, any more than *being aware of myself as a thing that is watching a show shot by TV cameras* requires me to see the cameras.⁸⁶

sensory qualities which we are (fact) aware (i.e. know) *that* we possess need therefore involve no qualitative feel itself.

⁸⁶ Or, perhaps more simply, any more than *being aware of myself as a thing that is watching* requires me to see my eyes.

Objection: *Yet we do sometimes see eyes and TV cameras, and that's how we know they're there; do we sometimes, then, become aware of awareness (in 'introspection')?*

Reply: Because awareness is so tightly connected with qualities being subjectively there for one *at all*, there's no need, in this case, to observe the organ 'from the outside'. I really doubt there's much to introspection, beyond, perhaps, thinking about the qualities one is aware of. But any sensory (or cognitive) qualities accruing to *such* thoughts, beyond the qualities of their sensory objects, are not contents the HOT apparatus is charged with generating, so no objection to HOT panqualityism lies in this direction. The HOT component's job is to produce first-order awareness. It follows that I deny, against Rosenthal, that HOTs can take other HOTs as objects (this is Rosenthal's model of introspection).

In fact there is not even an objection here that might affect the reply to Chalmers. If we *could* be introspectively aware of awareness (which I deny), that would involve a HOT targeting another HOT, which was targeting in turn certain 'floor-level' sensory qualities. If 'awareness' contributed sensory qualities to consciousness here, those would be qualities pertaining to the 'lower' HOT, the target of the meta-HOT. But of course HOTs *do* have qualities, because they are simply neural

vi. There's also a serious question concerning what the sensory content of the alleged feel of awareness *could even be*. Proponents seem clear that this feel is an additional sensory content beyond the other qualities one is aware of (those pertaining to the environment, one's body, thoughts etc.).⁸⁷ Now, we may ask, does this extra ingredient have its own, 'isolated', feel—is it a standalone qualitative ingredient in consciousness; or, is its feel somehow interpenetrated by the other, first-order, qualities of which one is aware? Problems arise either way. If awareness has its own distinctive feel, which qualitatively-speaking has nothing to do with, and makes no reference to, the other, first-order, qualities, then it is very hard to see how, in experiencing this quality, one could apprehend it as a feeling of *awareness of these (first-order) qualities*, i.e. as the very item it is supposed to be. Advocates of the phenomenology of awareness purport to be identifying it by its conscious feel. But this colourlessness would presumably have rendered the feel of *awareness of first-order qualities* unidentifiable as such, and likely wholly mysterious: a detached phenomenal UFO.

So it seems that the feel of awareness must somehow be *suffused* with the qualities that the awareness is of—the first-order qualities pertaining to

items, and on panqualityism all neural items (all items in fact) are constituted of qualities. These qualities are not (*per impossibile*) produced by a HOT's functional aspect, they rather *realise* or carry that very aspect (compare: a mousetrap is not of this configuration of wood *because* it's a mousetrap, but vice-versa). So there would be no difficulty with a HOT contributing qualities to consciousness, were it the object of a further HOT whose functional property made the former HOT conscious. I simply deny, on phenomenological grounds, that this occurs, however.

⁸⁷ E.g. Kriegel (2009: 180). It seems the feel of awareness couldn't very well be an 'aspect' independently added to each first-order quality of which one is aware: then in seeing a red rose one would have 'red-rose-plus-my-awareness' phenomenology; but this is not how red roses appear: they just appear red and rose-y. The popular doctrine of the transparency of experience (see e.g. Harman 1990) could never have got up and running, were the feel of awareness an aspect of every first-order sensory content.

experience of the environment, body, mind etc.⁸⁸ Then, at least, it exhibits to consciousness the intimate connection which it bears to these qualities. But now the position appears to be this: I am aware of a set of first-order qualities, and aware, additionally, of an awareness-qualia that *phenomenally includes* reference to (is 'stained by') these same first-order qualities. It seems to follow that I get every first-order quality *twice* in consciousness: once in its own right (as a 'floor-level item', in Kriegel's phrase), and once more as 'staining' the feel of my awareness of all these first-order qualities. This duplication is unavoidable, since the sensory quality of awareness is posited as an item *additional* to the first-order qualities, while containing, in its feel (where else?), reference to them. Yet, while I cannot locate the feel of awareness, I am certain that I don't have this doubling of qualities in my experience. The feel of awareness is here construed as a kind of mirror, giving reflection of every quality presented to it. I do not have this mirror, only its putative objects.⁸⁹ Either my phenomenology (or 'introspection') is atypical, or there's some confusion it seems in the doctrine of the feel of awareness.

vii. If awareness lacks phenomenology, as I have suggested, then there is not a distinctive kind of sensory quality that the HOT apparatus must contribute to consciousness. Awareness is as it were *behind the lens*.⁹⁰ This means that, as

⁸⁸ This is in fact the line Kriegel (2009: 180) takes.

⁸⁹ Even if it's in the phenomenological background, as Kriegel says, a faint mirroring or duplication there must nonetheless (phenomenally) be.

⁹⁰ This metaphorical location permits it of course its structuring effect on phenomenology. Another plausible example of such a phenomenon is *memory*. Memory is not behind the lens but *below the surface* as regards appearances. Like awareness, all we get from memory is (delivery of) some items of which we are aware, but memory itself makes no appearance in terms of sensory content. To be sure, there is a feel to *trying to remember*, also a feeling of *having*

against Chalmers, there is no phenomenological residue left unanalysed by HOT panqualityism.⁹¹ While there is good reason to doubt that any sensory quality could be a purely functional affair, there is no such reason to doubt that awareness itself, unassociated with any sensory quality, could be a functional property. For all we presently know, higher-order thought may be the correct analysis.^{92, 93}

V.

i. I conclude that 1). The subject combination problem reveals a deep lack of theoretical motivation for panpsychism. 2). Panqualityism, with the addition of a HOT apparatus for awareness, has the resources to make serious inroads into the non-subject combination problems. 3). Chalmers gives us no reason to doubt the adequacy of the sort of functional analysis of awareness offered by HOT theory.

ii. It seems that if constitutive Russellian positions enjoy significant advantages

successfully recalled, but the memory process itself—what comes in between these conscious events—is wholly obscure to awareness.

⁹¹ For I claim that the structuring aspects of the HOT system will be deducible—*given* details of the qualitative clay on which it is to effect its moulding, naturally.

⁹² Objection: *If there is no phenomenology of awareness to be theoretically analysed, how could the earlier critique of panpsychism rest on its inadequacy as a theoretical analysis of macrosubjectivity? Cannot panpsychism evade critique in the same way HOT panqualityism does?* Reply: Panpsychism's failure really consisted in an inability to say anything useful about the *constitution* and *structure* of macrosubjects, in particular, about why they have the unity and boundaries they do. By contrast, one of HOT panqualityism's strengths is the explanation it can provide of these features. The accusation against panpsychism was never that it could not account for awareness *as such*, since this it simply presupposed!

⁹³ It will likely be said that it remains perfectly conceivable that our HOT-panqualityist duplicates might lack awareness. But as awareness has no proprietary sensory quality associated with it, I'm simply unsure what someone could be conceiving of who made this claim, since zombie-style conceiving requires a sensory quality toggle between the actual world and the relevant zombie world—some qualitative content that we can subtract, in conception, from the zombie world. In this sense, 'awareness zombies' are inconceivable.

over mainstream physicalism and dualism,⁹⁴ then, given its advantages over panpsychism, panqualityism has a fair claim to be our best hope for a theory of consciousness.

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⁹⁴ As Chalmers forthcoming argues.

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