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# The unity of consciousness: subjects and objectivity

**Elizabeth Schechter**

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**Abstract** This paper concerns the role that reference to subjects of experience can play in individuating streams of consciousness, and the relationship between the subjective and the objective structure of consciousness. A critique of Tim Bayne's recent book indicates certain crucial choices that works on the unity of consciousness must make. If one identifies the subject of experience with something whose consciousness is necessarily unified, then one cannot offer an account of the objective structure of consciousness. Alternatively, identifying the subject of experience with an animal means forgoing the conceptual connection between being a subject of experience and having a single phenomenal perspective.

**Keywords** Unity of consciousness · Streams of consciousness · Subjects of experience · Individuating experiences · Phenomenal consciousness · Vehicles of experience · Tim Bayne

## 1 Introduction

Some accounts of the unity of consciousness attempt to articulate its felt nature. Others seek to determine its objective basis. Since one hopes, ultimately, for an integrated account of both the objective and the subjective structure of consciousness, works that evidence this dual ambition, such as Tim Bayne's *The Unity of Consciousness* (2010), are particularly important.

The book is organized in part to defend the thesis that consciousness is inevitably unified within an *animal*—a bold claim, these days, in light of the large and growing number of dissociations that seem to suggest that, under the right kinds of pressure,

E. Schechter (✉)
Department of Philosophy, Philosophy–Neuroscience–Psychology Program,
Washington University, St. Louis, MO, USA
e-mail: eschech@wustl.edu

anything can break down. Bayne recognizes the magnitude of the challenge, and the book's middle portion is devoted to a tireless critical examination of putative counterexamples to his *biological unity thesis*. In the first and third sections of the book, meanwhile, Bayne defends a *conceptual* version of the unity thesis, according to which consciousness is necessarily unified within a purely phenomenal *subject of experience*.

Despite the wealth of empirical literature brought to bear on its topic, then, this is also a work that aims to take the first-person perspective seriously. This dual ambition makes the book ideally suited for a discussion of some of the most fundamental questions facing anyone who would offer an account of conscious unity. One such question is this: is phenomenal unity a subjective or an objective relation?

Bayne's ambivalence on this crucial matter manifests itself in several ways. He does not distinguish between the question of the token identity of streams of consciousness and questions of 'within stream' token identity, for instance. He is also indecisive about whether subjects of experience are themselves objective or subjective entities. The relations among these three issues—the nature of phenomenal unity, the difference between whole streams of consciousness and mere "experiences" within them, and the nature of subjects of experience—are complex and intricate, and each issue is difficult to navigate in its own right as well. I propose to proceed by discussing each of these three issues separately, explaining what I think is problematic about Bayne's own approach and ideas in each instance, while pointing, along the way, to connections between that issue and the others.

One thread linking these three issues concerns the contrast between Bayne's account of the identity of conscious experiences, and the account he rejects in its favor. According to the first account, the identity of any conscious token—an experience within a stream of consciousness or a whole stream of consciousness itself—is determined by its subject, its phenomenal character, and its time of occurrence; a second account would make some physical or functional properties of a conscious token essential to its identity as well.

The contrast between the tripartite and the vehicular account is to my mind most interesting in the context of two much broader debates within the philosophy of psychology. The first has to do with the distinction between the personal and the subpersonal level of explanation generally and with the level at which we should expect any kind of satisfying answer to the problem of the unity of phenomenal consciousness in particular. The second is the classic debate about isomorphism between mental and neural structure. In recent decades there seems to have been some shifting of emphasis, in this debate, from the structure of cognition to that of consciousness (See, for instance, Revonsuo 2000; Hurley 1998.) In either case, issues of vehicles, isomorphism, and the relationship between phenomenal and neural properties are still central in the philosophy of cognitive science and in neuropsychology.

The paper shall proceed as follows. In the next section I will contrast two different kinds of questions we might ask about the identities of conscious tokens; Bayne's failure to distinguish these is problematic since the tripartite account of experience that he adopts is defended only in the context of one of these questions,

and is less well-suited to answer the other question Bayne wants to answer. Section 3 directly addresses whether phenomenal unity is a subjective or an objective relation between conscious phenomena; I argue, along with Hurley (1998), that it is an objective relation, albeit one that we initially "pick out" on the basis of the phenomenal *difference* it makes, to us, as subjects of experience. In Sect. 4 I turn to two different versions of the tripartite account that Bayne employs; each version corresponds to a different construal of the subject of experience. The first version, a "pure" tripartite account, is plainly inadequate to individuate streams of consciousness; the second is a viable account for that purpose—but this is because it is in fact a version of the *vehicular* account, as I argue in Sect. 5. It is not, however, the deepest or most satisfying version, as it must appeal to a number of brute facts that a closely related but slightly different version of the vehicular account would instead be able to explain.

## 2 The token experience versus the token stream question

The kind or concept of consciousness at issue in this paper is *phenomenal consciousness* (Block 1995; Chalmers 1997), and the unity relation between phenomenally conscious states, events, or properties that interests Bayne is *phenomenal unity*. Other kinds or concepts of consciousness, and other kinds of unity between conscious phenomena, don't raise the same conceptual challenges discussed here, presumably because of the close conceptual relationship between phenomenal experience and the *first-person* or *subjective* perspective (Nagel 1974). How to understand phenomenal unity—or, as I prefer, "phenomenal co-consciousness"—is one of the questions this paper attempts to answer, but at first pass, let us just note the following.

First, when I visually experience (only) a red balloon while you visually experience (only) a blue balloon at the same time, there is nothing it is like for either one of us to see a red balloon and a blue balloon together, since our experiences are not co-conscious. In contrast, and at least in the ordinary case, when I see a red balloon while simultaneously seeing a blue balloon, the two experiences are co-conscious, and thus there is something it is like for me to see the two balloons at once: it is not just that there is one thing it is like for me to see a red balloon and another thing, totally separate in my experience, that it is like for me to see a blue balloon: there is also something it is like for me to see a red balloon *while* seeing a blue balloon, something it like for me to have these experiences *together*. Bayne sometimes speaks of such experiences as having a "conjoint phenomenal character" (p. 10).[1] Presumably, on the basis of experiencing the two balloons *together*, rather than simultaneously but independently, I am then put in a position to draw particular conclusions about the two balloons I am experiencing—such as that the red balloon is larger than the blue balloon, or simply that the two objects I am now experiencing are of the same kind—that I would not be able to draw if the two experiences were conscious but not co-conscious.

[1] Unless otherwise stated all references to Bayne are to his 2010.

Questions about the unity of consciousness are questions about the relations that conscious phenomena bear to each other: they are questions about the *structure* of consciousness. Note that there may be a host of kinds of "unity" relations between experiences (Tye 2003)—spatial unity relations, coherence relations—but the kind that concerns Bayne and myself here is simply experienced *togetherness*: a "*this*, but also together with *this*", in experience.

If one takes the unity of consciousness to be a relation between experiences, as Bayne ostensibly does, rather than a relation between their contents or phenomenal characters, then determining the structure of consciousness requires the ability to identify or individuate the experiences whose unity with each other is at issue. When, early on in the book, then, Bayne first addresses the identity conditions of conscious tokens, he seems to endorse a kind of pluralism: "The business of counting experiences is a messy one, and there is more than one respectable way of going about it" (p. 28). This attitude might initially look puzzling, however, in light of the fact that Bayne will then go on to offer some bold and determinate views on the structure of consciousness.

This apparent tension can be relieved by keeping in mind a potential ambiguity in Bayne's references to individuating (counting) "experiences"—a term he uses to refer both to the individual experiences that comprise or belong to a single stream of consciousness and to whole streams of consciousness themselves—and by distinguishing two importantly different questions about the structure of conscious that disambiguate the kind of conscious token in question. (In contrast to Bayne, I will use the term "experience" to refer *only* to a proper part of a stream of consciousness and not to an entire stream of consciousness; when I want to refer to *either* an experience *or* a stream of consciousness I will use the generic term "conscious token.")

One sort of question is how to segment a single stream of consciousness into individual experiential "parts"—or: What distinguishes, from each other, conscious tokens that are nonetheless "unified" within a single stream of consciousness? Call this the *token experience question.* A second question is what distinguishes, from each other, conscious tokens that are *not* "unified" with each other—or, what distinguishes, from each other, conscious tokens that belong to, or that *are*, different streams of consciousness? Call this the *token stream question*. The first question is about individuating experiences *within* a stream of consciousness, then, while the second bears on the individuation of *streams of consciousness.*

Whatever their relationship, these two questions are importantly different. First of all, one of the things that distinguishes experiences in different streams of consciousness from each other is, prima facie, that they are located in different streams of consciousness. The identity conditions for conscious experiences and streams of consciousness might thus be different; the identity conditions for a conscious experience might appeal to the stream of consciousness in which it is located, for instance, while the identity conditions for that stream of consciousness obviously won't.

More interestingly, the token experience question and the token stream question appear to have different significance from the folk perspective. The token experience question doesn't seem to matter much from the folk perspective. Am I

having only a single experience of a glass on a table—or one experience of a glass that is, from my perspective, seamlessly unified with a second experience of a table? There doesn't seem to me to be anything in phenomenology, or anything that we have subjective access to, that would distinguish these possibilities. As long as scientists agree to leave each of us, at the end of the day, with a single unified stream of consciousness, it may not much matter to us, from the first-person perspective, how they go about articulating that stream into distinct experiences. In this and in earlier work with Chalmers (Bayne and Chalmers 2003), Bayne may even have explained why: if our most basic or fundamental concept of phenomenal consciousness is actually that of the unified whole, and if our phenomenological grasp on individual experiences is only as derivative or as aspects of this larger whole, then we ourselves may be disposed to carve the whole one way or another, depending on context. If that is right, then pluralism about the token experience question is a natural attitude even for the folk.

Pluralism toward the token stream question is another matter. All answers to the token experience question—even pluralistic and even mutually inconsistent ones—leave the subject of experience, and the *felt* nature of experience, untouched and intact. There is a concept of the subject of experience, however, that is *so closely tied* to the concept of a stream of consciousness, that any account that says how many streams of consciousness there are, appears to equally constitute an account of how many subjects of experience there are. Since we are (apparently) such subjects, answers to the token stream question appear to tell us how many of *us* there are. And *that* is something we do care about. To hear pluralism endorsed here—to hear, "Well, how many subjects of experience there are associated with your body probably depends, really, on the explanatory project at hand"—would be disconcerting, to say the least. While this may be no argument against the acceptability of scientific pluralism about the token stream question, the difference in the folk import or intuitive acceptability of pluralism toward the token experience versus the token stream question at least recommends that we distinguish these questions.

While *Bayne* does not explicitly distinguish them, I doubt that he would be quite as sanguine about a pluralistic response to the token stream question as his quote above would suggest.[2] I think this is because the endorsement of pluralism comes at a point in the book (Part I) in which he primarily focused on the token experience question, and, significantly, on what a single stream of consciousness feels like to its subjects. When he shifts to discussing whether whole streams of consciousness can multiply or divide within an animal (Part II), he ceases to be so pluralistic, arguing, again, for determinate (and indeed bold) claims about the structure of consciousness.

A further crucial reason for distinguishing the token experience from the token stream question, as Bayne appears not to, is that the account of conscious token identity. Bayne initially adopts and defends a particular account of the identity of conscious tokens in the context of discussing the token experience question; when

[2] In conversation he has acknowledged that he would be "less comfortable" with pluralism toward the token stream question.

he shifts to discussing the token stream question, he retains that initial account, while providing no further justification for its use in this new context. However well suited that account is to answering the token experience question, however, it is simply inadequate to answering the token stream question. The full reason why will emerge over the course of this paper, but let me say some preliminary things here.

As Bayne notes, the "tripartite account" of the identity of conscious tokens that he adopts is both philosophically classic and pre-theoretically intuitive. According to this account, a conscious token's identity is determined by three things: its subject of experience, its phenomenal character, and its time of occurrence. Its natural rival is one according to which the identity of a conscious token also or alternatively depends on some of its physical-functional features. Bayne rejects the latter, "vehicular account": conscious tokens of course have physical-functional features, but "we ought to be wary of the suggestion that the sub-personal features of consciousness might enter into their identity conditions. The unity of consciousness is an *experiential* aspect of consciousness, and our approach to it must take this fact seriously" (p. 27). Since phenomenal consciousness is an *essentially* experiential phenomenon, only experiential aspects of conscious experiences can be *essential* to their identities.

There may be a type-token confusion here. Even if the *type* identity conditions for phenomenal tokens were drawn in exclusively phenomenal terms, two conscious tokens can be *type-identical,* with respect to their phenomenology (and their representational content more broadly, and their time of occurrence)—so the *token* identity conditions for phenomenally conscious tokens *must* appeal to further, non-experiential features.

Admittedly, we have interests in phenomenal consciousness and unity that are not, in a sense, *about* conscious tokens. Suppose one wanted only to describe or articulate what having a stream of consciousness *feels like* to a subject—which is roughly the aim Bayne is pursuing, when he initially adopts a tripartite account and rejects a vehicular account. If there were two subjects with phenomenally identical experiences from moment to moment, then by using the tripartite account to articulate the felt structure of one of their streams of consciousness one would thereby have done the same for the other. Of course, to *know* that one had done the same for the other, *one would need to have already distinguished these streams of consciousness, and their subjects, in some other way* (see Sect. 4 on Bayne's proposed manner of doing this). That act of distinction falls outside of any purely subjective or experiential account of phenomenal unity, however.

Whatever appeal a purely subjective account of the identity of conscious experiences has, to answer the token experience question, it is inadequate to answer the token stream question. As for the appeal it does have, for answering the token experience question, it is capable, again, of articulating the *felt* or *subjective* structure of a single stream of consciousness. If we ask questions about its objective structure, and about the objective identities of its constituent individual experiences, we might look beyond phenomenology to things like, e.g., informational processing accounts of conscious experiences—e.g. generalizations about working memory capacity, which could be used to "segment" a stream of consciousness into

experiential "parts" of particular sizes. At that point, however, we might have passed beyond the realm of folk and into the realm of purely scientific interest. The token stream question, in contrast, is of great folk interest as well. That question is the focus of the remainder of the paper.

## 3 Phenomenal co-consciousness: an objective or a subjective relation?

To ask about the subjective structure of consciousness—as, for instance, Dainton (2000) does—is to ask about what consciousness *feels like* to its subject; it is to ask about the phenomenally apparent structure of consciousness. To ask about the objective structure of consciousness—as, for instance, Hurley (1998) does—is to ask about what structure consciousness in fact has. The two projects should be carefully distinguished, even if one believes that the subjective structure of consciousness somehow reflects its objective structure, or that consciousness's objective structure (rather than its content) accounts for its subjective structure. Without clearly distinguishing them, one falls prey to a host of subtle but important errors in reasoning and inference—all rooted in projecting, too quickly, the subjective onto the objective structure of consciousness or vice versa (One sees both errors in the unity literature.)

Bayne falls prey to this kind of error in the course of his in other ways careful investigation of the empirical literature bearing on the objective structure of consciousness, when he allows his analysis of the *biological* unity thesis to be constrained by conceptual truths that only properly concern the *subjective* structure of consciousness, as I explain in Sect. 4. I suspect that this error is made inevitable by adopting the tripartite account of experience, according to which the identities of experiences—the relata of the phenomenal unity or co-consciousness relation—are subjectively available to their subjects. That is, the objective identities of experiences are determined by their subjective features.

While this is my general analysis of Bayne's approach, it requires one qualification and one caveat as well. The qualification is that *at times* (Part II), Bayne makes essential to an experience's identity the organism whose experience it is (or in which it is located), and of course an organism's identity is an objective matter. The implications of this move, on Bayne's part, will be discussed in the following section, but in the meantime let us just say that at least *within an organism*, Bayne makes only the subjective features of conscious tokens essential to their identities.

The caveat, however, is that even *this* is not strictly speaking correct, because of how Bayne unpacks the "time of occurrence" feature. On the tripartite account, an experience's identity is determined by its subject, phenomenal character, and time of occurrence, and Bayne concludes (pp. 17–18) that the latter should be taken to mean the time at which an experience's *vehicle* instantiates (or comes to instantiate) the phenomenal property or character in question. This makes an objective feature of conscious experiences essential to their identities—a move that conflicts on its face with Bayne's general (and repeated) rejection of the idea that the identity conditions of conscious tokens should refer to anything "subpersonal" or physical

(or functional). Why the time at which their vehicle "occurs" and no other feature locating it within the spatio-temporal causal network at the world? Why this one (unremarked upon) exception?

The exception Bayne makes here may not be unprincipled per se, but rather misconceived, and is, in any event, not how Bayne *should* unpack the "time of occurrence" feature, consistent with a tripartite account. He is led to understand the "time of occurrence" feature in this way because he considers only two possibilities, the other of which is that phenomenal unity is a relation between two objective times represented in the contents of experience. Since we vividly remember the past and imagine the future, this obviously won't work; no question of (at least synchronic) phenomenal unity arises with respect to my experience of blowing out the candles at my 6th birthday party and my experience, now, of vividly recalling blowing out those candles.

There is a third possibility, however, if we allow that experiences don't just represent different objective times, and don't just (objectively) "occur" at different times, but that they (or their contents or characters) are also *subjectively experienced* as occurring at different times. That is, if I sit here now, and it seems to me *as if* I am feeling a wave of nostalgia at the very same moment at which it seems to me as if I am recalling my sixth birthday party, those two experiences—of a feeling of nostalgia and of undergoing visual images of my sixth birthday party—may be synchronically unified or disunified, even if their vehicles are not simultaneous, and even though one represents my emotional state now and one represents me decades earlier.

Consciousness, then, has not just an objective but a subjective temporal structure, the latter of which is more in the spirit of a "personal-level" account of conscious unity. (After explicitly identifying the "time of occurrence" feature with the time at which a vehicle instantiates a phenomenal property, Bayne himself hastens to add that "in practice the *experience of temporal relations* is tightly constrained by the temporal relations between experiences themselves" (p. 18, emphasis added).) I will for the most part ignore the "time of occurrence" feature in what follows, for three reasons. The feature does little work in Bayne's own account, and, best understood, it isn't an objective feature of conscious experience anyway. Most crucially, *however* the "time of occurrence" feature is unpacked—objective time represented, objective time of representing, or subjective experience of temporal property—it is a *type* of thing: that is, there can be (there in fact are) many conscious tokens, all with the very same "time of occurrence." Moreover, there can be many conscious tokens all with the same phenomenal character *and* the same time of occurrence—so some *further feature* will be necessary to distinguish them.

To make only the subjective features of conscious experiences essential to their identity is odd on its face—at least, it is for anyone who accepts transparency, i.e. that all we are phenomenologically presented with in experience are the contents or characters of our experiences. Does Bayne accept transparency? He hedges slightly. On the one hand, "We certainly do not have introspective access to the sub-personal basis of conscious states—their nature as neuro-functional states" (p. 33). To accept the tripartite account, though, is to

> identify experiences with instantiations of phenomenal properties. On this conception of experiences, we *are* aware of our experiences as such in being aware of which phenomenal properties we instantiate. I am currently aware that I instantiate the phenomenal property distinctive of tasting coffee, and in being aware of this fact I am also aware of the corresponding experience. On the tripartite conception of experience, the contrast between 'access to experiences' and 'access to the contents of experience' is a false one, for in having access to the contents of experience one also has access to experiences themselves. (p. 33; original emphasis)

This won't do, however, because of the seemingly innocuous but in fact question-begging reference to the "corresponding experience," singular. If I am currently aware that I instantiate the phenomenal property distinctive of tasting coffee, am I aware of having one experience as of coffee's flavor, another as of its scent, and another as of liquid of a particular temperature? Or am I instead aware of having a single experience encompassing these three aspects? Again, I see nothing in phenomenology (and there is nothing in Bayne's account of phenomenal properties) to distinguish these possibilities.

Furthermore, what about the possibility of what Bayne calls "phenomenal duplication"—the possibility of a subject's having two (simultaneously occurring) experiences with the same phenomenal character? If phenomenal duplication is possible, then the most I could know, in being aware of instantiating the property distinctive as of tasting coffee, is that I was at that moment subject to *at least one* experience with that phenomenal character.[3]

If phenomenal duplication is possible, then the most that could *ever* be true is that where I am aware of a *difference* in phenomenal properties, then I am aware of a corresponding difference in experiences. And as a general rule it is of course true that, despite transparency, we have some indirect access to the identities of our experiences in this way.

The tripartite account by definition rules out the possibility of phenomenal duplication, however (Something that one might otherwise think should be ruled out, if it is ruled out, on the basis of empirical and theoretical considerations.) But to do this is no more than to simply insist that the only things essential to experiences' identities are whatever their subjects have first-personal access to.

Of course one can, if one wants, thus reduce or restrict the identifying features of conscious experiences to their purely subjective features. This bold choice has a bold consequence, however: the most one can provide, armed with such an account, is a purely subjective account of conscious structure. Bayne is no doubt interested in this sort of project (as Part III of the book especially makes clear), but not exclusively. He also interested in how many streams of consciousness there are in the world—or, rather, interested in individuating streams of consciousness, and in whether there might be any animal with multiple streams of consciousness. Answers

[3] I am unsure whether, when Bayne refers to my *awareness* of my experiences, he means this "awareness" cognitively or experientially; if he means it experientially, then if I had two simultaneous experiences with the same phenomenal character, then simply by being aware of that character, I would thereby be aware of *two* corresponding experiences—even if I did not *know* this.

to these questions are not contained within any subjective perspective, for the simple reason that a subjective perspective "opens out" onto only its own stream of consciousness and none other. To know how many such streams and how many such perspectives there are, then, we must step *outside* of any subjective perspective. To put it plainly: the non-identity of my experience to your experience is not subjectively presented to me, since your experience isn't presented to me in the first place.[4]

Bayne's own ambivalence about whether or not objective features of experiences are essential to their identities is mirrored by (or perhaps rooted in) a corresponding ambivalence about whether or not the phenomenal unity relation is an objective one. This latter question comes up most pressingly in a brief and early discussion of Hurley's views on the unity of consciousness (see especially Hurley 1998). Hurley says that questions about the unity of consciousness cannot be resolved by simple appeal to "what it's like" for a subject—cannot be resolved by purely subjective considerations, that is.

Bayne points out that Hurley has nonetheless already apparently *characterized* the phenomenal unity relation in "what it's like" terms. He objects:

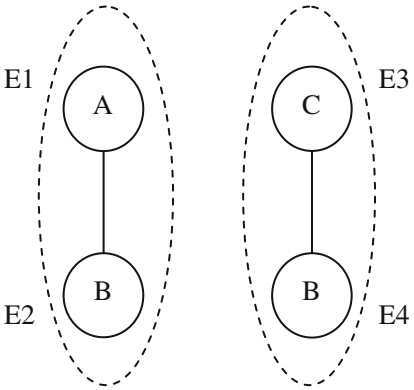
> Despite claiming… that we cannot think of the unity of consciousness in 'what it's like' terms, Hurley herself appeals to just such a view in introducing the very notion of co-consciousness. 'There is unity of consciousness when various states and their contents are co-conscious: are together within one consciousness, rather than featuring in separate conscious points of view' (Hurley 1998, p. 88). What might it mean for conscious states to be 'together within one consciousness' if not that the states share a conjoint phenomenal character? Given Hurley's rejection of 'what it's like' accounts of the unity of consciousness it's not entirely clear what she means by 'co-consciousness' (Bayne, p. 41, fn 13).

I agree with Bayne that Hurley is not entirely clear about how she understands the unity of consciousness. Perhaps she equivocates, using "unity of consciousness" to refer sometimes to the structure of a single phenomenal perspective (whose *felt* unity *can* be captured entirely in terms of "what it's like" to have that perspective), and at other times to refer to a condition of an animal—an animal who might or might not have multiple phenomenal perspectives. In any event, my own view is that, in the quoted line from Hurley above, much of the conceptual work is done (and most of the clarificatory work left undone) by her joint reference to *states and their contents.* What Hurley should say, I would argue, is that two experiences are phenomenally co-conscious not when there is something it is like to undergo them together, nor when there is something it is like to undergo their contents or characters together, but when there is something it is like to undergo their contents or characters together, *in virtue of* some special relation that holds between those experiences. And I think Hurley should identify co-consciousness with that special

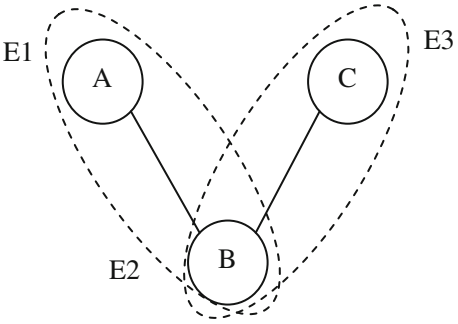
[4] The only reason Bayne is able to pursue, at all, the issue of how many streams of consciousness there are in the world, is because in Part II of the book he identifies subjects of experience with experiencing animals or organisms, and the identities of animals or organisms are objective. The significance of this move will be discussed in Sect. 5.

relation. Criterially, this co-consciousness relation obtains, between any given experiences, only when there is a particular *felt* relation between their phenomenal characters; but it holds between those experiences, rather than their characters. This makes co-consciousness an objective relation—we do not experience *it,* in and of itself—but it is because of it that we have a subjective experience of unity, and it is via this felt unity that we "pick out" this objective relation.

This notion of co-consciousness would allow Hurley to characterize co-consciousness in "what it's like" terms while still insisting that, for example, there is no "what it's like" difference between partial unity of consciousness on the one hand and conscious duality with partial duplication of contents on the other, and that differences in conscious structure (of an animal) therefore cannot be captured in "what it's like terms." Consider an animal whose experience encompasses only the phenomenal characters A, B, and C, and in whom A and B are experienced together (they have a felt unity) and so too B and C, and yet A and C are not experienced together. Consider two possible models of the structure of this animal's consciousness:




**Model 1** Conscious duality with partial duplication

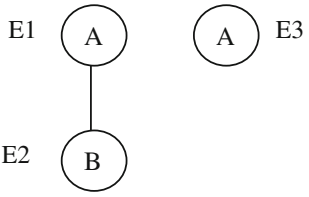



**Model 2** Partial unity of consciousness

The solid lines represent the co-consciousness relation—again, on my proposal, a relation between *experiences*—and the dashed lines circumscribe the boundaries of a phenomenal perspective (Lockwood 1989), where a phenomenal perspective encompasses all and only those experiences that are mutually co-conscious. Now, one question one might have concerns the relationship between a subject of experience and a phenomenal perspective; I will return to this issue in the next section. For now, however, I'll remain neutral on whether Models 1 and 2 should be interpreted as each postulating or implying the existence of a single subject of experiences with two phenomenal perspectives (which overlap in Model 2) or whether Models 1 and 2 should be interpreted as both involving two subjects of experience, one per phenomenal perspective.

In either case, from the phenomenal perspective, these two cases are indistinguishable: there is something it is like to experience A and B together and something it is like to experience B and C together and nothing it is like to experience A and C together—there is no phenomenal perspective encompassing both A and C, that is. The two models are objectively different, however, and we might decide them on the basis of theoretical considerations, including a desire to integrate our model of consciousness with a neural model of consciousness, and including parsimony, and so on [see especially Lockwood's (1994) reply to Hurley (1994)].

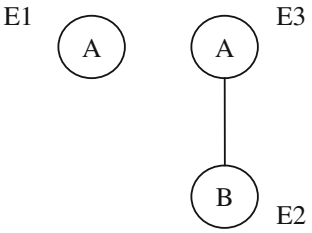
Again, I think that the best way to make sense of Hurley's appeal to "what it's like" in order to characterize phenomenal co-consciousness and her simultaneous rejection of "what it's like" accounts of the unity of consciousness, is to identify the co-consciousness relation with whatever relation it is that holds between experiences in virtue of which there is something it is like to undergo their characters together (This co-consciousness relation could be multiply realizable; it might be different in different species, for instance.) Whether or not this is the correct interpretation of Hurley, however, it is this view of co-consciousness that I will accept here. Consider how it deals with the following kinds of case:




**Straggler 1**

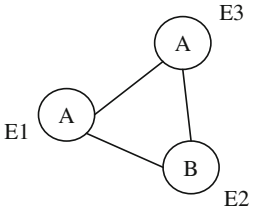
Suppose these are all the experiences of one subject of experience, S (I believe that in at least one important sense they cannot be, but set that aside for now.) Is there "something it is like" for S to experience E3 and E2 together? In one sense—in the qualitative or comparative sense—the answer is "yes": what it is like for S to experience E2 and E3 together is exactly what it is like for S to experience E1 and

E2 together. Note that there is no *subjective* difference between that case and this one:




**Straggler 2**

Or, for that matter, between either straggler case and this one:




**Duplication**

Of course, *counterfactually* they differ: for instance, if E3 suddenly ceased to exist, it would make no phenomenal difference in Straggler 1 or Duplication, but it would make a phenomenal difference in Straggler 2; if E2 suddenly ceased to exist, it would make no phenomenal difference in Straggler 2 or Duplication, but it would make a phenomenal difference in Straggler 1; either E1 or E3 (but not both) could suddenly cease to exist without it making any phenomenal difference in Duplication.

Speaking objectively, although there is something it is like, in all three cases, for S to experience *A and B together*—and it's all the same to S, from S's own perspective, whether it's E1's or E3's A, or both, that is experienced together with E2's B—E2 and E3 aren't co-conscious in either of the Straggler cases. If we return to Straggler 1, we can say that it is only in virtue of the co-consciousness relation between E1 and E2 that there is something it is like for S to experience A and B together. E3 plays no role in this felt unity; things would feel identical if E3 didn't exist.

It seems to me that this account of the co-consciousness relation—as a relation that is not in and of itself, technically, experienced, but one *in virtue of which* experience has the kind of felt unity Bayne is interested in—captures or exemplifies a common method of procedure or investigation in science (Grice 1961). We pick out a certain phenomenon by pointing to an aspect of it with which we have pre-theoretic acquaintance, typically by exemplar. In this instance, then, we might say, "When I don't just feel tired at the same time that I feel hungry, but I feel tired and

hungry *together*—when it feels, to me, as if I'm undergoing some kind of *combined* state of hunger-and-fatigue—*that* phenomenon: what is *that?*" We then await scientific investigation of the objective basis of this experienced togetherness. Although the first step along the path to the discovery of this objective relation is through our own phenomenal experience, it may nonetheless turn out that, sometimes, the objective relation holds or fails to hold between some experiences even when its doing so makes *no phenomenological difference* either way—as in cases of phenomenal duplication. Contra Bayne (p. 27), this does not fail to take seriously that the relation of interest is, nonetheless, a phenomenal or experiential one, in a crucial sense. It particularly does not do so if there is a ready *explanation* for why the failure of phenomenal unity makes no phenomenal difference in such occasional instances.

Let me make a further point, an intuitive objection to which will offer a nice segue into the next section. I have argued that the co-consciousness relation is a relation between experiences, not phenomenal characters. One might think that the inter-subject case just *shows* this. Consider that the co-consciousness relation (whether or not it is strictly speaking necessarily a transitive relation) seems to tend toward transitivity—transitivity is a kind of organizing principle for consciousness. But that I am experiencing, together, A and B, and that you are experiencing, together, B and C, provides no reason to suspect that either of us (or the two of us together somehow) are experiencing A and C together. We don't expect transitivity here, because it would have to be transitivity between *phenomenal characters,* and the co-consciousness relation, with its tendency toward transitivity, does not hold between phenomenal characters but between experiences—and your experiences aren't co-conscious with mine, we assume.

Bayne would, I think, reply by pointing out that he himself does not make co-consciousness a relation between phenomenal characters but between experiences, whose identities are not fully given by their phenomenal character (and time of occurrence) but also by their subject. Perhaps he would say that what the inter-subject case above shows is that the co-consciousness relation holds only within a subject—or, perhaps, that co-consciousness is a relation not between phenomenal characters but between states (or property instantiations) of a single subject. If this (clearly plausible) claim is true, however, then *why* is it true? One version of the tripartite account offers an explanation—but this is a version of the account that cannot be used to answer the question of how many streams of consciousness there are *within* an animal. Another version of the account can be used to answer that latter question—but this version is, first of all, in fact a version of the vehicular account, and meanwhile offers no *explanation* of why co-consciousness holds only within an animal. A seemingly similar but importantly different version of the vehicular account offers this explanation.

## 4 Subjects of experience: organisms or intentional entities?

It is when one begins trying to individuate whole streams of consciousness that the nature of *subjects of experience* becomes particularly pressing. Bayne distinguishes

three broad classes of possibility: an organismic account of the subject of experience, a psychological account, and a phenomenal account. At different times in the book he avails himself of an organismic construal of the subject of experience and a phenomenal construal; these are sufficiently different so as to effectively give rise to two different versions of the tripartite account: an *organismic* tripartite account and a *phenomenalist* tripartite account. I believe that neither version is best suited to answer questions about the identity and structure of conscious experience, and especially the token stream question, but the reason why is very different in the two cases, so I will discuss them separately.[5]

According to the phenomenalist tripartite account, the identity of a conscious token (including a whole stream of consciousness) is a matter of its phenomenal character, its time of occurrence, and its subject of experience—where a subject of experience is itself a purely phenomenal, merely intentional entity (pp. 289–294). Bayne believes that only this account of the subject of experience can do justice to the incredibly intimate conceptual connection between subjects and unity, since it makes the relationship between subjects of experience and streams of consciousness constitutive.

I like this account of the subject of experience, sharing Bayne's assessment of its merits. Bayne, however, does not explicitly note (though perhaps he implicitly realizes) a crucial limitation of the account. If a subject of experience is a purely phenomenal, merely intentional entity—if it is something represented by a stream of consciousness, rather than something that enjoys any independent existence—then we cannot really use subjects to individuate streams of consciousness. The point is not at base epistemic: if subjects of experience are no more than phenomenal (or intentional) entities; if their features are exhausted by properties of the streams of consciousness that represent them; if in fact they do not strictly speaking even *exist,* then the tripartite account of the identity of conscious tokens is really just a bipartite account, and all that is essential to the identity of a conscious token is its phenomenal character and its time of occurrence. But these are *types* of things: at a single point in time, two conscious tokens, including two streams of consciousness, could surely, at least in principle, be of the same phenomenal and representational type. There must then be additional feature of these conscious tokens in virtue of which they *are* distinct tokens.

It is understandable, then, that Bayne does not actually avail himself of the phenomenalist tripartite account until portions of the book at which he is *no longer concerned with* the token stream question, for the phenomenalist tripartite account, which is a purely subjective account of the identity of experiences (and thus what I would call a "pure" tripartite account) cannot answer that question. During moments at which he is concerned with the token stream question, then—with the issue of, for instance, whether or not there are any animals with multiple streams of

[5] Although I will not discuss a psychological account of the token stream question, the version of the vehicular account I articulate in the next section may constitute such an account; see Shoemaker (1984).

consciousness—Bayne instead adopts the organismic tripartite account, which identifies the subject of experience with the whole organism or animal.[6]

This version of the tripartite account is at least a viable one for answering the token stream question. The question, only, is why should we accept it. One concern is whether it really brings sufficient resources to bear on the individuation of conscious tokens—particularly where "hard cases," of the sort that present an empirical challenge to the biological unity thesis, are concerned. I suspect that Bayne supplements the proper resources of the organismic tripartite account here with additional conceptual constraints that are inappropriate to the account; I return to this point in a moment. Even in the simplest, "easy" cases, though, the answers that the organismic tripartite account provides to the token stream question seem to lack much depth. If we ask what makes your stream of consciousness different from mine, undoubtedly one answer is that they have a different phenomenal character, but this (merely contingent) fact doesn't seem to get at the most fundamental difference. It gets at something more fundamental (if not exactly illuminating) to say that the difference is that yours is yours and mine is mine. But now suppose that we are trying to determine whether a single human being, a single animal, has two streams of consciousness. Bayne presumably does not want to simply deny, from the beginning, that such a thing is possible—otherwise why the careful labor of Part II of the book? If we begin by countenancing the *possibility* of a single human being with two streams of consciousness, we must ask what would make *them* different. Phenomenal character is, again, a possibility, but it is still not clear that it is the most fundamental one, in part because it is not clear why what is most essential to the identity of multiple streams of consciousness within an animal (different phenomenal characters) should be fundamentally different from what is essential to the identity of multiple streams of consciousness in different animals (different subjects).[7]

Furthermore, we might of course ask about the possibility of phenomenally identical experiences within one animal—perhaps in two different streams of consciousness (which might or might not be entirely phenomenally identical). Even if it were merely hypothetical, this question would be of theoretical import: if there is reason to believe that phenomenal duplication within an animal is possible even in principle, then the organismic tripartite account cannot be correct, for it makes phenomenal duplication within an animal impossible even in principle. As it happens, though, the question is not merely hypothetical, for there are philosophers

[6] Note that the phenomenalist tripartite account does have a certain appeal where the *token* experience question is concerned, perhaps because it appears to have no further ambitions than that of articulating the *felt* structure of experience. The organismic tripartite account brings the same resources to bear on the token experience question yet seems less satisfying, because it seems to have pretensions to capture something more.

[7] If we accept the organismic tripartite, and don't begin by ruling out the possibility of multiple streams of consciousness in one animal, then the most we can offer is a kind of disjunctive account: across animals, streams of consciousness are distinguished by their subject; within an animal, by their phenomenal character. I think one could provide a kind of causal/functional justification for this claim, but doing so would require a slightly different account of the identities of conscious tokens, one according to which what distinguishes streams of consciousness from each other is at a very deep level the same in all cases. See Sect. 5.

and psychologists who have attributed to a split-brain subject two streams of consciousness with some type-identical experiences, and who might indeed think that the plausibility of a conscious duality model for split-brain subjects hinges upon the possibility of at least some such type-identical experiences.

It is here that my one dialectical objection to Bayne's book arises. Why *should* we accept that there can be no phenomenal duplicates within an animal? First, all Bayne explicitly seems to say is that such duplicates are simply impossible on the (organismic) tripartite account, even though whether or not we should accept that account is part of what is at issue—especially, perhaps, when faced with something like the split-brain phenomenon, in which the potential differences in conscious structure between split-brain and non-split subjects are presumably rooted in neuroanatomical differences of the sort that only a vehicular account can appeal to. Second, and more seriously, all that it seems *Bayne* can appeal to, to deny the possibility of phenomenal duplication, and *consistently with the spirit of a subjective account of phenomenal unity,* is that having phenomenal duplicates wouldn't *feel* like anything. There is no difference from the phenomenal perspective between having one experience with a given character and two experiences with that identical character. Since we are now talking about experiences with the same phenomenal character but in *two different streams* of consciousness, though, *why think that there would be only a single subjective perspective?* Each stream of consciousness is presumably associated with a distinct subjective perspective—and thus the phenomenal duplicates do make a "phenomenal difference" in the sense that, if one stream suddenly ceased containing any experiences type-identical with experiences in the other, the subjective perspective associated with that stream would (qualitatively) change.

Bayne now faces another fundamental choice that must be made by any theorist of phenomenal unity, or at least any who would appeal to subjects of experience: what is the relationship between a subjective or phenomenal perspective on the one hand, and a subject of experience on the other? Is it or is it not possible for a single subject of experience to have two phenomenal perspectives (at one time)? If a subject of experience is *constitutively* related to a phenomenal perspective, then there is nothing to rule out that there are multiple subjects of experience within an animal—for surely an *animal* is not *constitutively* related to a phenomenal perspective. Alternatively, we can identify the subject of experience with an animal, *rather than* with a subjective perspective. But now there can be multiple subjective perspectives within a single subject of experience. Either way, phenomenal duplication within an animal looks in principle possible.[8]

Bayne, I think, wants it both ways; he wants, somehow, to identify a subject of experience with an animal and yet to also have there be a constitutive relation between subjects of experience and phenomenal perspectives or streams of consciousness. In order to rule out phenomenal duplication within an animal, he

[8] In his defense of an animalist account of the subject of experience, Snowdon concedes that we cannot imagine what it is like to *be* a subject with a disunified consciousness. But, he says, "this merely raises the question whether there *has* to be some way that it is like… when there is a single subject of experience" (1995, p. 78). He implies that there doesn't, and if a subject of experience *is* just an animal, then I can't see that he's wrong.

supplements a "pure" version of the tripartite account—i.e. a version according to which the identities of conscious experiences depend exclusively upon their subjective features, and according to which, therefore, phenomenal duplication is impossible—with something objective: he identifies the subject of experience *not* with something that bears a special (ultimately constitutive) relationship to subjective perspectives and streams of consciousness but with a living, breathing animal. He does this, however, without relinquishing the *conceptual* connection between conscious unity and a *purely phenomenal, merely intentional* subject of experience—without relinquishing the conceptual connection between subjects of experience and subjective perspectives, that is (He uses this conceptual connection not only against the possibility of phenomenal duplication, but also against Lockwood's (1989) partial unity of consciousness model, and indirectly against Hurley (1998).) He therefore continues to appeal to that conceptual connection, even during times at which he is *ostensibly* assuming that the subject of experience is an animal—and then waits until later in the book to acknowledge that the organismic concept of the subject of experience can't be the one that is so essentially connected to our concept of conscious unity.

Again, I think this would be an error even if the issue had no greater dialectical import. The error is only compounded by the fact that it rules out, by fiat, what one would think is an otherwise not wholly implausible model of split-brain consciousness (conscious duality with partial phenomenal duplication), and in any event one that, even if ultimately wildly inadequate, should turn out to be wildly inadequate on at least *partly* empirical grounds.

For all that, however, one *could* come up with an argument that ruled out phenomenal duplication, within an animal, on functional or causal grounds, rather than on subjective grounds. Such an argument suggests an account of the identity of conscious experiences that is quite similar to the organismic tripartite account and yet is in fact a vehicular account. I turn to such an account now.

## 5 Organisms and causal systems

Ironically, in light of Bayne's stated objections to any account of the identities of conscious experiences that appeals to their subpersonal features or to facts about their vehicles, the organismic tripartite account is arguably itself a version of the vehicular account. Bayne draws the distinction between the two kinds of account in terms of the personal/subpersonal distinction—a vehicular account appeals to subpersonal features of experiences while the tripartite account doesn't—and while I don't know if an organism's identity is a "subpersonal-level" feature, per se, it doesn't seem to be a "personal-level" feature as that is normally understood.[9]

Furthermore, while the tripartite account makes no appeal on its face to anything physical, functional, or causal, such features are "smuggled into" an organismic version of the account, because organisms are causal systems, and because the "belonging" relation—the relation between an experience and its subject—will

[9] Louise Richardson suggests that it is perhaps *a*-personal.

presumably itself have to be unpacked in physical or functional terms. Finally and most simply, I suggested in Sect. 2 that the fundamental difference between the tripartite and the vehicular account is that the former is a *purely subjective* account of the identities of experiences. The identities of organisms, however, are objective.

Since an organismic subject of experience isn't a purely subjective being, there is, again, nothing in the account in and of itself to rule out the possibility of phenomenally identical experiences within one and the same "subject," since there is nothing to rule out that such a subject would have multiple distinct phenomenal perspectives. That said, one might attempt to rule out the possibility of phenomenal duplication, within an animal, on functional or causal grounds, and indeed I think there is a prima facie plausible argument lurking in this area that phenomenal duplication within an animal is not possible. Allow me a few paragraphs to explain.

If experiences and streams of consciousness are real, then (most would agree) they must occupy a space in the causal network of the world. One thing that would distinguish your stream of consciousness from mine, even if they were type-identical at every moment, would be that they occupied different overall places in the causal network of the world, because each is located within a different causal system—the causal system associated with your mind and your body and that associated with mine. This suggests what I think is a plausible proposal: what determines the identity of a conscious token is, in part, the causal system in which it is located. This suggestion could also help motivate and provide causal justification for Bayne's emphasis on phenomenal character: perhaps, *given* locatedness within a particular causal system, the powers of an experience are determined by its phenomenal character of content (if the causal powers of experiences supervene on their characters or contents).

There are systems everywhere, though; what is the kind of system locatedness within which is relevant to the identities of conscious tokens? A neural circuit? A visual system? A hemisphere? A nervous system? A mind? A brain? A body or animal? An animal—plus aspects of its environment with which it interacts sufficiently intimately? A kin group? A culture? What we want to do is to locate that system within which important generalizations about experiences can take hold. It's hard to say exactly what these generalizations should be of course; we might point to relations between experience and memory, or experience and action; in the spirit of the holistic perspective on consciousness that Bayne advocates, we might even suggest that some of these important generalizations will involve unity with other experiences. Indeed, if Bayne is right, then one important generalization is that consciousness comes unified: the relevant causal systems, then, are those *within each of which* all experiences are unified (and across which no experiences are).

From this perspective we can see the organismic tripartite account as making a certain hypothesis: that the kind of causal system locatedness within which determines a conscious token's identity is a whole animal. Needless to say, the hypothesis enjoys a high degree of plausibility. There are many generalizations about experiences that appear to hold only for experiences within a single animal, and not for experiences that are located in different animals. It is also a fair hypothesis that the system within which the *type identity conditions* for conscious tokens are met and defined is a whole animal. If that is correct, then we have a

reasonably good argument that phenomenal duplication within an animal isn't possible. (Again, assuming one also accepts that the functional role of an experience supervenes on its phenomenal character, or perhaps its representational content more broadly.)

Now we have two rather similar accounts with which we could attempt to answer the token stream question: the organismic tripartite account, and the "causal systems account"—according to which it *may well turn out that* the relevant causal system is the whole animal, but might not. Their similarity suggests, again, that the organismic tripartite account is in fact a version of the vehicular account. The difference between the two is that the organismic tripartite account begins by stipulating what can be *discovered* using the causal systems account. For this reason, the causal systems account enjoys a kind of explanatory priority over the organismic tripartite account, even if the latter turns out to be serviceable. That is, even if it turns out to be correct that experiences can be identified by appealing to their phenomenal character, time of occurrence, and the animal to which they belong, the causal systems account explains *why:* because an organism is that causal system within which the important generalizations we want to make about experiences take hold.

On the other hand, those who have looked at the split-brain phenomenon have often been led to conclude that the relevant causal system may be somewhat smaller than the whole organism—that the relevant causal system may be either a hemisphere (Sperry 1977), or perhaps a system combined of hemispheric and subcortical pathways (Tononi 2004), or perhaps almost the entire organism, *minus* one hemisphere (Davis 1997). Evidence that conscious unity does not hold interhemispherically, in the split-brain subject, is evidence that, whatever it is, the relevant causal system cannot be one that includes both hemispheres. I suspect that many who have argued for conscious duality, in the split-brain subject, in part by appealing to the fact that experiences in the split-brain subject are located in two different hemispheres which aren't "directly" connected, have been implicitly appealing to something like this "causal systems account," which uses locatedness within a particular system to individuate a conscious token.

Whether or not the relevant causal system is the whole animal is an empirical matter, according to the causal systems account (a "pure" vehicular account). Does this mean that it is an exclusively empirical matter, according to the causal systems account, whether or not the subject of experience is identifiable only with the whole animal? The answer is "no"—it depends upon the *kind* of subject of experience one means, where this itself is a conceptual matter. Again, I liked Bayne's account of the purely phenomenal, merely intentional subject of experience or self, one he arrives at via introspection and conceptual analysis. But it is at least a partly empirical matter how *that* subject of experience relates to the experiencing animal. So there is important conceptual work to be done here—and there may be multiple concepts of the subject of experience at play. The point is that once one has articulated a concept of the subject of experience according to which it is the merely intentional subject of a stream of consciousness, it is an open question how many subjects of *that* sort there are within a subject of experience of a different sort—an experiencing animal, that is.

## 6 Conclusion

My major arguments have been that if we want to understand the objective structure of consciousness, and indeed, if we want to be able to individuate streams of consciousness at all, so as to know, for example, how many such streams a single animal possesses, then we need to make *objective* features of conscious tokens essential to their token identities. To this end, the phenomenal co-consciousness relation should itself be understood to be an objective relation. The relation is one that we first pick out on the basis of our pre-theoretical, phenomenological acquaintance with it, but whether or not it holds between two particular experiences is not itself necessarily something that makes a phenomenal difference to any subject.

Bayne must choose between identifying the subject of experience with a subjective or phenomenal perspective—such that a subject of experience necessarily has a single, unified phenomenal perspective—and identifying a subject of experience with a conscious animal. Going the former route allows the tripartite account to articulate the subjective structure of a single stream of consciousness, but no more; it cannot be used to individuate streams of consciousness or subjects of experience. Going the latter route, forgoing a subjective account of the identity of experiences, requires forgoing the conceptual connection between our identities and our first-personal perspectives on our own conscious experience.

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