

Attentional Organization and the Unity of Consciousness*

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Introduction

The relationship between one and many is a recurrent philosophical theme, whether it is the organism, the proposition, or the cosmos. From a distance they seem to be unified wholes. From up close there may seem to be nothing more than pluralities of cells, terms, or material objects. What is the relationship between the whole and its parts? In each of these cases, it has been suggested that the key to understanding how there could be a unified whole despite its having many parts lies in the way the parts are organized or structured.¹

The issue arises also for consciousness.² From a distance there is unity. *This* is my experience: a unified phenomenal field, one subjective perspective, one total conscious point of view. But from up close there is plurality. *Those* are my experiences: hearing the Jazz, seeing the letters, touching the keyboard, feeling an itch, thinking about consciousness and unity, and an elevated overall mood. Could the *organization* of consciousness also be the key to understanding its unity? If so, what would be the relevant form of organization?

In this paper I will consider how the *attentional organization* of consciousness into center and periphery bears on the phenomenal unity of consciousness. I will discuss two ideas.

According to the first idea, the attentional organization of consciousness shows that *phenomenal holism* is true, i.e. the view that the phenomenal parts of a subject's experience metaphysically depend on her whole phenomenal experience. An argument to this effect has recently been proposed by Elija Chudnoff (2013), who attributes a similar view to the phenomenologist Aaron Gurwitsch (1929/2009, 1979/2009). While probably the best case for phenomenal holism, I will argue that

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¹ For some recent approaches in that broad general spirit consider, among others: Van Inwagen (1990) (organisms); Fine (1999), Johnston (2006), and Koslicki (2008) (material objects and organisms); Schaffer (2010a,b) (cosmos); King (2007) (propositions).

² Throughout this paper I will use 'conscious' to mean 'phenomenally conscious' (Block, 1995), where an occurrence is phenomenally conscious just if there is something it is like to enjoy that occurrence (Nagel, 1974). I will use the term 'experience' to refer to any kind of conscious occurrence (whether it is sensory or not).

the argument from attentional organization to phenomenal holism remains inconclusive.

I then propose a second conception of how to think of the connection between attentional organization and the unity of consciousness. According to this conception, attentional organization provides a *principle of unity* for conscious experience, i.e. it is a relationship between the phenomenal parts that occurs in the real definition or essence of consciousness.³ Attention is what builds conscious perspectives. Conscious experience, on my proposal, provides subjects with a *subjective field*, *perspective* or *point of view* because its various parts are structured by attention into what is more central and what is more peripheral.

For the purposes of the discussion of this paper I will take for granted that consciousness does indeed have attentional organization. Further, I will take for granted that this organization cannot be fully explicated in terms of how the world appears to the subject or in terms of differences in intentional content. I take it that the difference between the attentional structure of consciousness and the contents of consciousness is fairly intuitive. I have argued for the difference in other work.⁴ My present goal is to consider what follows from the existence of such attentional structure with respect to the unity of consciousness.

Here is how I will proceed. I will start with a preliminary section (Section 1) that will make some clarifications, introduce the framework within which I am going to look at the unity of consciousness, and make the two questions about phenomenal holism and the principle of unity for consciousness more precise. In Section 2 I will introduce the relevant form of attentional organization. I will sketch how an account of attentional organization can be developed and define the property of being an *attention system* and the relation of *attentional connectedness* between a plurality of experiences. After arguing (Section 3) that attentional connectedness is sufficient for phenomenal unity, Section 4 will lay out the attention argument for phenomenal holism (cf. Watzl, 2011; Chudnoff, 2013). I will argue that, while more plausible than other defenses of phenomenal holism, its success depends on a rather subtle question of how to individuate experiences. For this reason it remains inconclusive. Section 5 will then present the alternative conception. I will present an argument to the effect that attentional connectedness is a principle of unity for conscious experience. I will conclude (Section 6) with a summary of what has been achieved.

³ Following the hylomorphic conception of the relationship between part and whole proposed in Johnston 2006 (see also Fine (1999) and Koslicki (2008)).

⁴ Watzl (2011, forthcoming).

1 Preliminaries⁵

1.1 Phenomenal Unity

Many kinds of unity can be found in consciousness.

There is, for example, the unity of a perceptual object – the way various perceptual qualities like color, shape, or movement are bound together to form a unified experience of a single object such as an experience of a red, up-ward moving circle. There is also Gestalt unity – the way a number of perceptual objects are unified to form a single, recognizable perceptual configuration or Gestalt. Or there is thematic unity – the way we experience a single coherent scene or perceptual narrative.⁶

Attention might play an important role in an account of all of these unities (though in each case the relationship is complex).

According to Anne Treisman’s feature integration theory of attention (e.g. Treisman, 1998), for example, one of the roles of attention is to bind perceptual features or qualities together that would otherwise have been unbound. Since binding features like color and shape is essential for the perception of unified perceptual objects, the feature integration theory implies that in many circumstances attention is responsible for the unity of perceptual objects (though, importantly, not in *all* circumstances; see Quinlan, 2003)

Attention is also important for which Gestalts we experience. In the famous Rubin Vase and similar stimuli, attention affects what is seen as a Gestalt figure and what is experienced as background. Koffka (1922), one of the founders of Gestalt psychology already observed that “a connection exists between the figure-ground consciousness and the attention, so-called. [...] [W]hat we find is a functional dependency, instead of a descriptive identity. As a rule the figure is the outstanding kernel of the whole experience. Whenever I give attention to a particular part of a field, this part appears in the figure-character” (p. 561). Again, just like for object unity, attention is important for Gestalt unity in many but not all circumstances.⁷

Finally, arguably the focus of attention is partly responsible for weaving coherent perceptual narratives. Consider the findings by Uta Frith (2003) and others on how differences in attentional style distinguish the perceptual experience of people with autism spectrum disorder from those of other subjects: roughly, they pay more attention to detail rather than “the big picture”. Those patients seem to live in a

⁵ The general approach here has been influenced by Dainton (2000), Bayne and Chalmers (2003), Bayne (2010), Lee (forthcoming), and Masrour (forthcoming).

⁶ See Bayne and Chalmers (2003) and Bayne (2010) for an overview of these types of unity.

⁷ See also the detailed analysis in Gurwitsch (1929/2009). For more recent work, see e.g. Yantis (1992) or Van Leeuwen et al. (2011).

thematically more fragmented perceptual world due to differences in the way they employ their attention.

My focus here is going to be on the connections between attention and a different form of unity, i.e. what Bayne and Chalmers (2003) call the *phenomenal* unity of consciousness. This unity concerns the fact that there can be something it is like to have a number of experiences *together* even if they do not, for example, form a single Gestalt or a coherent perceptual narrative. Consider the experiences I started with (the hearing of the Jazz, the seeing of the letters, the touching of the keyboard, the feeling of an itch, the thinking about consciousness, and the elevated mood). They do not present a single Gestalt or narrative (at least, they didn't for me when I had them). Nevertheless, there is something it is like to have all of them together. They are phenomenally unified, even though they are not object unified, Gestalt unified or thematically unified.

When some experiences are phenomenally unified they compose a single conscious experience of which they are parts. In what follows I will operate within this *mereological conception* of the unity of consciousness (Bayne, 2010). I will focus on the *synchronic phenomenal unity of consciousness*: the phenomenal unity of experiences that occur at the same time.

A number of questions may be asked about phenomenal unity:

One such question concerns the conditions of unity: under what conditions, if any, are some experiences unified? That is: under what conditions, if any, do some experiences *ee* compose an experience *e* that has them as parts?^{8,9} One answer to this question would be: just in case they are all experiences *of the same subject*. Tim Bayne (2010) has called this *the unity thesis* and has defended it against, for example, the threat posed by the sort of dis-unity that can be found in split-brain patients (see also Peacocke 2014).

Another question about phenomenal unity concerns its explanation: what, if anything, *explains* why some experiences *ee* compose another experience *e* when they do?¹⁰ This question is not settled by the unity thesis (or another answer to the previous question): maybe being experiences of the same subject explains why some experiences compose; maybe there is some other explanation for both why they compose and for why they are experiences of the same subject; or maybe it is a brute fact that some experiences compose and we just use the term "subject" to pick out the bearer of those experiential wholes.

For the purposes of this paper, I will, for simplicity of exposition, assume the unity thesis, and so the relevant whole experiences are going to be the experiences of a

⁸ This question is an analogue of Van Inwagen's (1990) Special Composition Question.

⁹ I use 'ee' as plural variable ranging over experiences, and 'e' as a singular variable with the same domain.

¹⁰ See Masrour (forthcoming) for a detailed discussion of this question. The relevant notion of explanation here is metaphysical explanation or grounding. See e.g. Fine (2013).

single subject. I will remain neutral with respect to the explanation of unity. My focus is going to be on the bearing of attention on two other questions about phenomenal unity. I will introduce them in the next two subsections.

1.2 Holism

Suppose that we have an experiential whole composed of some experiential parts. Both exist. We may ask: what is more fundamental, the parts or the whole (following Schaffer, 2010; Lee, forthcoming)?

To illustrate, consider Franz Brentano's two hemispheres of a spherical indivisible atom (Brentano, 1874/2012, p. 121 ff). These are the kind of part that exists only *in virtue of* the whole of which they are parts. They are not independent existents, out of which the whole is constructed, but mere abstract divisions within the whole. A heap of some pebbles, by contrast, seems different. Here it is the heap that exists in virtue of the existence of the pebbles. Its existence is fully explained by the existence of the pebbles and not the other way around. So are the parts of experience more like the pebbles or more like the hemispheres?

The first main question for this paper then is this: given that some experiences compose another experience, does the fact that the parts exist ground the fact that the whole exists or the other way around?

The thesis to be discussed is the following.

Holism The fact that the experiential parts exist is grounded in the fact that the experiential whole exists.

Whether holism is true is independent of the unity thesis. Suppose that the unity thesis is true. In this case, each subject has one whole experience with many parts. There might still be nothing more to the existence of a whole experience than the fact that all the parts exist. It is just that each part is an experience of one and the same subject. So, the unity thesis is compatible with the denial of holism. But it is also consistent with it. There might be some fact concerning a subject's whole experience that shows that its existence is metaphysically prior to the existence of each of the parts.

I will consider an argument to the effect that the attentional organization of a subject's whole experience is such a fact that shows holism to be true (cf. Chudnoff, 2013). If this were so, then facts about attention would not just be relevant for object unity, Gestalt unity or thematic unity. They would also have an important bearing on the *phenomenal* unity of consciousness: they would show that holism is true of consciousness. Yet, I will show that the soundness of this argument depends on how experiences are individuated. If they are individuated in one way then the argument goes through, but if they are individuated in a different way then the argument doesn't go through. Since it is hard to decide which way to go here (and indeed whether there is an objective answer to this question), we reach an impasse.

1.3 Principles of Phenomenal Unity

There is another question about experiences and their parts, though, on which – as I will argue – consideration about attention have a bearing. Philosophers who discuss the unity of consciousness often ask questions like this: what does the unity of conscious states *consists in*? (cf. Brook and Raymond, 2010) Or: *What is it* for some experiences to be unified? (cf. Bayne, 2010, p. 20f). This seems to be an interest in the *nature* of phenomenal unity.¹¹

There may be different ways of understanding these types of questions. I propose to understand here it in terms of the following question (which I will presently explain):

What is the principle of unity of experience?¹²

The idea here is the following. Experiences are *complex* unities. In this respect they are like other entities such as organisms, molecules, propositions, or sets. We can also ask about the unity of organisms, the unity of molecules, or the unity of propositions. One way to understand the question about their unities is as a question about the unity generating principle that is constitutive of unities of that kind. What is the kind of relation that some atoms must bear to each other in order to form, for example, a molecule? On this understanding, the principle of unity will occur in a statement of the real definition or essence of what it is a unity of. Mark Johnston puts it as follows.

A statement of the genuine parts and principle of unity of an item [...] takes the following canonical form:

What it is for ... (the item to be specified here) *... to be is for ...* (some parts specified here) *... to have the property or stand in the relation ...* (the principle of unity is specified here)

¹¹ To answer a question about what the unity of consciousness consists in is not the same as answering a question about what metaphysically grounds the unity of consciousness. Claims about essence and claims about grounding can come apart (Fine, 2013). Consider that the fact that this object is colored is grounded in the fact that it is red. But it is not what it is for this object to be colored that it is red (it is not in the nature of its being colored that it is red). Were the object not red, but green, then the fact that it is colored would have been grounded in the fact that it is green (Fine, 2013). Apply this to the present case: suppose that some fact f_1 grounds the unity of consciousness, i.e. grounds the fact that some experiences compose another. This is compatible with the claim that were f_1 not the case but f_2 , then the fact that some experiences compose another would have been grounded in f_2 . So, someone who holds that experience composition is grounded in some fact need not hold that this fact is essential to experience composition or necessary for it. It will only be necessary that (1) if this fact holds then there is experience composition, and (2) given that this fact holds it *grounds* experience composition. (maybe it is part of the nature of experience composition that it can be grounded in f_1 as well as f_2).

¹² See Johnston (2006) for this way of stating the unity question (Johnson does not apply these ideas to experience).

As in: *What it is for* this hydrochloric acid molecule *to be is for* this positive hydrogen ion and this negative chlorine ion *to be bonded together.* (Johnston, 2006, p. 658; italics in original)

So, the principle of unity for X will occur in a statement of what it is for X to be. Molecules are the kind of thing that is composed of certain atoms, ions or other molecules by certain principles of chemical bonding. There are the parts and there is the principle of unity. Johnston suggests thinking of these as matter (the parts) and form (the principle of unity) (Johnston, op. cit.). If we just had the parts, but no unifying principle, we wouldn't have the relevant whole: a hydrogen ion at one end of the universe and chlorine ion at the other end do not form a molecule precisely because there is no chemical bond between them (they might still form another type of whole with a different principle of unity: a mere mereological sum).

What then about experience? Is there some unity forming principle that occurs in a statement of the essence of conscious experience, i.e. a principle involved in what it is for conscious experience to be? An answer to that question would take the following form: what it is for conscious experience to be is for Y to R , where the Y is a part or parts ("phenomenal matter") and the R is the property or relation that is the relevant principle of unity ("phenomenal form").

Some might think that such a search for the essence of consciousness – for what it is for something to be a conscious experience – is a misguided project. It might be suggested that nothing informative can be said about what it is to be conscious – as Block (1980, p. 281) puts it with reference to Louis Armstrong: "if you got to ask, you ain't never gonna get to know." Wouldn't an attempt to state the essence of consciousness fall prey to the same problems that plague reductive definitions of consciousness? Not necessarily. A claim about the essence of consciousness need not take the form of a naturalistic reduction of consciousness. To illustrate, consider the plausibility of the claim that "what makes something a conscious state or event is that there is something it is like for the subject of that state or event to be in that state, or to be the subject of that event" (Peacocke, 2014, p. 40). This is not a naturalistically reductive definition of consciousness. But it is naturally understood as a claim about the essence, nature or real definition of consciousness. It is part of the nature of consciousness, according to Peacocke, that there is something it is like *for a subject*. It is compatible with this claim that there is no naturalistic account of subjects, and indeed – as Peacocke holds – that consciousness is part of the real definition of subjects as well.¹³

I will argue that attentional organization is part of the real definition of consciousness. Specifically, attention is for consciousness what chemical bonding is for molecules. It is what builds unified conscious experiences. Attentional structure thus is a form of consciousness; phenomenal qualities are its matter. The crucial idea will be the one I

¹³ Subjects and consciousness thus would have "reciprocal essences" (Fine, 1995, p. 65). Thanks to Jon Litland both for pointing me to this reference as well as for general help concerning the metaphysics of ground and essence.

mentioned at the beginning of this paper: what it is for something to be an experience is for it to provide subjects with a *perspective*. I will suggest that this *perspectival* character of consciousness is partially explained in terms of the way attention structures the parts into non-spatial forms of foreground and background. I will thus argue for the following claim.

Attentional Essence What it is for conscious experience to be is for a subject's qualitative states or events to form an attention system.¹⁴

If the attentional essence claim is true, then – like on Chudnoff's phenomenal holism – attention plays a crucial role for the phenomenal unity of consciousness. Indeed, the role is arguably much greater. Appeal to attention does not *just* appear in an account of the unity of consciousness; it occurs in an account of the *unity* of consciousness because it occurs in an account of *consciousness*. Attention on this view is not just a brain mechanism that happens to cause consciousness, i.e. as some psychologists say, “bring a stimulus to consciousness.” (Mack and Rock, 1998). Attention is part of what it is to be conscious.¹⁵

2 Attentional Organization

After this preliminary discussion of my topic and the claims I am going to discuss (the holism claim and the attentional essence claim), I now introduce the relevant notion of attentional organization.

The idea that the field of consciousness has attentional structure is highly intuitive. When I focus attention on an itch there seems to be a sense in which the itch experience is central in the field of consciousness, while the feeling of elevation, the experience of the Jazz, and the experience of the letters become a mere periphery to that central experience. By contrast, when I start focusing on the melody being played by the saxophone, the itch experience moves from the center to the fringe or margin

¹⁴ On my formulation both the subject and the property of forming an attention system occur in the real definition of consciousness. It is easy to construct a variation of the attentional essence claim, though, that makes no reference to the subject and hence is compatible with the denial of Bayne's (2010) unity thesis or Peacocke's (2014) claims concerning the connection between subjects and consciousness (such a variant of the attentional essence claim thus is compatible with a view on which the experience of normal subjects is highly fragmented: unity reaches exactly as far, but not farther than attentional structure). Note also that the attentional essence claim should be understood as a claim about a *partial* essence of consciousness (a constitutively necessary condition), and hence is compatible with other true essence claims about consciousness (some philosophers might, for example, hold that intentionality or self-awareness are also essential to consciousness).

¹⁵ Prinz (2012, 2013) defends a view that can be interpreted as a version of the attentional essence claim (on Prinz' view consciousness is highly fragmented, because attention is highly fragmented. See Fn. 14). His argument is empirical. My own argument, by contrast, will have an a priori character. Note that it is consistent with my own view (in contrast to Prinz (2012)) that there are also unconscious forms of attention (e.g. Kentridge et al. 1999).

of my field of consciousness. The piano experience is more peripheral than the sax experience, and the itch experience is in the periphery of even the piano.

There are various ways of describing the relevant structure: as a non-spatial form of foreground and background; as theme, field and margin; or as a structure of more or less phenomenal salience. What matters is not the choice of words, but the structure they describe. It is a contrastive structure in experience that *connects* the various parts of my subjective perspective.¹⁶ The Jazz experience is *in the background* of the itch experience. As this example illustrates, attentional organization can span different modalities, such as vision or touch, as well as sensory experiences and thought experiences or mood experiences. Attentional organization thus is a candidate for an organization that structures a *whole* subjective perspective.

Some people might be inclined to reduce the attentional organization of consciousness to differences in appearances or, more specifically, perceptual content. Maybe the saxophone sounds a little louder when I attend to it. Or maybe the itch appears a little more intense when it is the focus of my attention. Could it be that the organization of center and periphery amounts to nothing more than such differences in appearances? In other work I argue that this is not so. The attention structure of experience cannot be fully captured by the various effects of attention on the appearances, i.e. how it affects how the world looks, sounds, smells, etc. to the subject.¹⁷

In the present paper, I will take the failure of the reductive program as my starting point: the attentional organization of the field of consciousness isn't a matter of the way things appear to the subject, but indeed a matter of how that field is organized. With Aaron Gurwitsch we may put the starting point like this.

“[T]his much has already been established: turning to, and being turned to, a theme cannot be accounted for in terms of distribution of illumination, but rather in terms of organization of the field of consciousness [...] It is not a matter of obscuring or brightening but is one of organization” (Gurwitsch, 1929/2009, p. 226)

How, then, can the idea of attentional organization be made more precise (see also Watzl, 2011, forthcoming)? We can get started by introducing a relation between experiences. We can call it *the peripherality relation*.

Here is an intuitive gloss on peripherality: attentional organization is like prioritizing books you want to read. You stack them up with the one that is most important to you on top, and the other further down. Peripherality then is like being lower on the stack. The attentional organization of consciousness is such a prioritizing. It is a stacking up of the various elements of consciousness (this image might help to convince that attentional structure is not itself a part or element of consciousness; at least it is not

¹⁶ See Section 3 for more on the contrastive character of the relevant structure.

¹⁷ See Watzl (2011, forthcoming).

like the other parts. It is what connects elements of consciousness, but not itself such an element).

If we let e_1 and e_2 stand for experiences (like the experience of the saxophone, or the experience of the itch), we can make the following stipulative definition.

Peripherality $e_1 P e_2 =_{\text{Def}} e_1$ is peripheral to e_2

This is not a reductive definition. I use the term “peripherality” in the definiens. Someone who does not understand what peripherality is will not understand this definition. I introduce the relation ‘P’ in a way that is similar to how one might introduce ‘p&q’ by saying that ‘p&q’ holds just if ‘p’ holds and ‘q’ holds. No one will understand this unless they already understand what ‘and’ means. It can still be helpful to formalize the notion to make explicit that conjunction connects propositions or sentences, and to then use the notion in order to define further things. This is how I will take peripherality. Peripherality is the basic notion. I make no attempts at defining it reductively. It is a relation between experiences. Maybe there is, at the end of the day, a reductive definition of peripherality in more fundamental terms, maybe there is not (I doubt that there is one).

I introduced peripherality as a dyadic relation. One experience is peripheral to another. Peripherality is plausibly irreflexive, anti-symmetric, and transitive (though the last can be doubted). Further, peripherality is a phenomenal relation in the following sense (where ‘ e_1 ’ etc. are names for experiences or their parts, and ‘ x_1 ’ etc. are variables with the same domain).

Phenomenal N -adic relation $Rx_1 \dots x_N$ is phenomenal $=_{\text{Def}}$ any world where $Re_1 \dots e_N$ holds is phenomenally different from a world where $Re_1 \dots e_N$ does not hold.

The instantiation of the peripherality relation by two experiences thus makes a difference to what it is like. There is a difference in what it is like between a case where the itch experience is peripheral to the saxophone experience and one where it is the other way around.¹⁸

Peripherality is a powerful primitive. We can use it, for example, to make the following further definitions (Watzl, 2011; Chudnoff, 2013):

Center of consciousness e is at a center of consciousness $=_{\text{Def}} \sim \exists x(x \neq e \ \& \ ePx)$.
That is: e is not peripheral to any other experience.

Fringe of consciousness e is at a fringe of consciousness $=_{\text{Def}} \sim \exists x(x \neq e \ \& \ xPe)$.
That is: no other experience is peripheral to e .

Field of consciousness e lies within the field of consciousness $=_{\text{Def}} \exists x, y(x \neq y \ \& \ xPe \ \& \ ePy)$. That is: there are some experiences that are peripheral to e , and e is also peripheral to some other experiences.

¹⁸ If peripherality is instantiated between un-conscious events, it may not make a phenomenal difference (as the case may be in forms of unconscious attention).

One might be able to define other interesting notions with our peripherality primitive, and one might say more about the interrelations between the various defined notions. I am not going to pursue this here.

The only notion that we need for the discussion is the following (I will first provide an informal characterization). If we abstract away from the asymmetry of peripherality we can think of two experiences as peripherality *related* just if either one is peripheral to the other. We can then think of a sequence of experiences that are each peripherality related to each other. Suppose also that we want a relation that as a limiting case a single experience bears to itself (so we also want to abstract away from the irreflexive character of peripherality). This is the relation we want. We can call it *attentional connectedness*. The new relation we have is, in formal terms, the reflexive, symmetric, transitive closure (= equivalence closure) of the peripherality relation. Put simply, some experiences are attentionally connected just if it is possible to walk on a path of peripherality relations from each of them to all others without caring about direction (where not moving counts as a limiting case of walking). Here then is the official definition.

Attentional Connectedness Some experiences ee are *attentionally connected* $=_{\text{def}}$ all ees are related by the equivalence closure of P .

If some experiences are attentionally connected, then they form a kind of system or structure. We can call it an *attention system*.

Attention System Some experiences ee form an attention system $=_{\text{Def}}$ those ees are attentionally connected.

Within such an attention system we find particular *positions*. These positions are in fact filled by particular experiences, but could be filled by different ones (center and fringe are generalized positions: similar positions in a variety of attention systems).¹⁹ Suppose, to introduce the idea, that there are three experiences e_1 , e_2 and e_3 . Suppose that e_1Pe_2 , e_2Pe_3 and e_1Pe_3 . This system is intuitively described by saying that e_3 is on top of the stack, just below is e_2 and e_1 is on the bottom. The *position* of e_3 in that system is the top location in that specific attention system. That position (in this particular attention system) is uniquely picked out by replacing (in the usual Ramsey-sentence method) all experience names with variables like this: The- $z(\exists x,y (xPy \ \& \ yPz \ \& \ xPz))$. Such a description can be given for any of the other experiences as well. The position of experience in an attention system thus is given by its relations to all the other experiences in that system.²⁰

Our questions now can be made more precise. If some experiences form an attention system, is phenomenal holism true of them, i.e. do the parts of the attention system

¹⁹ See Koslicki (2008) for an illuminating discussion of the general notion of structure and the way it provides for positions in this sense.

²⁰ Note that position in this sense need not be unique; whether they are depends on the structure of the attention system.

depend for their existence on the whole? Further, does forming an attention system occur within the real definition of consciousness?

3 Sufficiency

Is attentional connectedness even sufficient for phenomenal unity? If it weren't, neither the argument for phenomenal holism nor the argument for the attentional essence claim would get off the ground. So, could there be some experiences that are attentionally connected but do not compose a further experience?

The answer to this question, I claim, turns crucially on whether attentional connectedness and peripherality are internal or external relations in the following senses.

Internal_{intrinsic} N -adic relation $Rx_1 \dots x_N$ is internal_{intrinsic} =_{Def} the fact that $Rx_1 \dots x_N$ is fully grounded in the intrinsic properties of $x_1 \dots x_N$, i.e. in properties that any duplicate of $x_1 \dots x_N$ would share.

External_{intrinsic} N -adic relation $Rx_1 \dots x_N$ is external_{intrinsic} =_{Def} the fact that $Rx_1 \dots x_N$ is not fully grounded in the intrinsic properties of $x_1 \dots x_N$, i.e. in properties that any duplicate of $x_1 \dots x_N$ would share.²¹

The paradigm of an internal_{intrinsic} relation might be the relation of *having more mass than*. Whether two things bear that relation to each other is completely fixed by how each is intrinsically (i.e. by the mass of each).²² Internal_{intrinsic} relations thus aren't part of the fundamental inventory of the world. A world of objects that bear only internal_{intrinsic} relations to each other doesn't fundamentally contain any relations at all. It is fundamentally a mere plurality of objects with their various intrinsic properties.

The holding of internal_{intrinsic} relations between some experiences would not be sufficient for experience composition. For a fundamental description of a world with some experiences that are only internally_{intrinsic} related would not contain any relations between these experiences at all. The internal_{intrinsic} relations between two experiences thus are, for example, preserved if one is an experience of one subject and another is the experience of a different subject, or if one is had at one end of the universe and the other at the other end (for an example of a *phenomenal* internal_{intrinsic} relation consider the relation of *being more intense than* that might hold between two pain experiences. The holding of this relation is plausibly completely fixed by the intensity

²¹See Schaffer (2010b) for the labels and Lewis (1986) for the definitions. Lewis (1986) just speaks of internal relations – without the subscript. As Schaffer (2010b) points out there are other important senses of the notion of an internal relation. Since these will be significant in our discussion of phenomenal holism, I have followed Schaffer's labeling.

²² The case of mass (like any other one) is not uncontroversial, see Dasgupta (2013).

of each pain experience). Any relation that is sufficient for phenomenal unity, thus, must be external_{intrinsic}.

Further, plausibly any relation between some experiences that is *both external*_{intrinsic} and *phenomenal* is sufficient for the composition of an experiential whole that is composed of the so-related experiences. For there now is something it is like to have e_1 being *R*-related to e_2 that is not fixed by having e_1 and having e_2 , but does fix what it is like to have e_1 and what it is like to have e_2 . So we have an experiential whole with those other experiences as experiential parts.²³

What then about peripherality? It is a phenomenal relation. Is it also external_{intrinsic}?

The intuitive notion of peripherality is the external_{intrinsic} one. Relative peripherality is like foreground and background. Whether one thing is in the foreground of another thing is not fixed by their intrinsic properties. It is an external_{intrinsic} relation. Indeed all the spatial metaphors for thinking about attentional structure (e.g. center and periphery, field and margin) suggest that we think of it in external_{intrinsic} terms: spatial relations are, intuitively at least – and this is what matters for the power of the metaphors – external_{intrinsic} relations.

Yet, someone might make the following counter-proposal. Couldn't the holding of peripherality between two experiences be grounded in the *attentiveness* of each experience, where this is an intrinsic phenomenal property of individual experiences? Attentiveness would stand to peripherality like height stands to shorter-than. The fact that experience e_1 is peripheral to e_2 would then be grounded in two facts: (1) the attentiveness of e_1 , and (2) the attentiveness of e_2 . There would be nothing more to peripherality than (1) and (2). In this case peripherality would be internal_{intrinsic} and thus not sufficient for phenomenal unity.

In reply to this counterproposal consider the following.

First, there is the function of attention. The claim most consistent with the evidence is that attention serves to *prioritize* certain stimuli over others. Given the variety of inputs a subject is exposed to and the variety of actions she could take, she needs to assign priority of some over others. This prioritization is crucial for coordinated action, reasoning, deliberation, etc.²⁴ For the execution of this function an alleged monadic property of attentiveness would be an idle wheel. It would be like ordering your books from the most important to the least important by first giving each book some importance value, and then using that value to stack the books accordingly. The

²³ Indeed, the kinds of relations between experiences that philosophers have thought to be sufficient for phenomenal unity are all plausibly thought of as external_{intrinsic} phenomenal relations. See Masrouf (forthcoming) for the claim that the unity of consciousness is grounded in the holding of such phenomenal relations between experiences. While Masrouf does not explicitly discuss the issue of internal and external relations, he seems to assume (plausibly) that the relations he is interested in are external_{intrinsic} relations. I agree that such relations are at least sufficient, but – for present purposes – will not decide whether their holding also *grounds* phenomenal unity, as Masrouf argues.

²⁴ Wu, 2010; see also Allport, 1984; Neumann, 1984, Mole, 2011; Smithies, 2011; Dacey Jennings, 2012.

first step is unnecessary. The same holds for attentional prioritization: the computational problem such prioritization solves is solved most efficiently without absolute levels of attentiveness.

Second, this is how our brains actually seem to solve that computational problem: if we look at the mechanisms that implement attention we find that they implement relative priority and not absolute attentiveness. The most popular current approach to the mechanisms of attention is the biased competition approach. On this approach neuronal representations inhibit each other in a process that gets biased through top-down signals from motivational and decision making areas of the brain (see Desimone and Duncan, 1995). In this competition process we can define relative priority, but we cannot define any notion of the absolute strength of a neuronal representation. Absolute firing rates, and other monadic properties correspond to the ordinary properties (such as shape or color) represented by that neuronal population, while relative properties (such as relative firing rates or relative synchrony) correspond to attention. What determines success in the competition process thus are relations (or comparative measures) between the properties of neuronal populations and not the absolute amplitudes of neuronal firing, synchrony and the like.

The intuitive idea that peripherality is an external_{intrinsic} relation thus corresponds to the most efficient solution to the computational problem attention plausibly solves. Further, this seems to be how our brains indeed solve that computational problem. The balance of reasons thus speaks for the external_{intrinsic} conception of peripherality. We can thus proceed our discussion on the now validated assumption that forming an attention system is sufficient for some experiences to form a whole. Let us now consider what follows from that.

4 Attentional Organization and Phenomenal Holism

In particular, let us consider the following claim.

Attention System Holism The fact that an experiential part of an attention system exists is grounded in the fact that this attention system exists.

To see whether attention system holism is true, let us start by asking whether the attentional organization of consciousness is consistent with the following atomism about consciousness.

Atomism The fact that an experiential whole exists is fully grounded in the fact that the experiential parts that compose that whole exist.

According to atomism the existence of experiential wholes can be fully explained in terms of facts about their parts. The idea thus is that once we have a particular collection of experiences, there is nothing more to the whole than is already given by the parts.

Atomism plausibly implies a modal claim. If the existence of the whole is fully grounded in the existence of the parts, then each of these parts could have existed without the whole (because – given the asymmetry of grounding – its existence does not depend on the existence of the whole). This form of atomism thus is one way of articulating what might be meant by Hume (1739/2000) when he says “that what we call a mind, is nothing but a heap or collection of different perceptions” and continues by saying that “every perception [...] may be consider’d as separately existent” and hence “there is no absurdity in separating any particular perception from the mind” (sec. 1.4.2, p. 137f).

If some experiences form an attention system, then atomism cannot be true of them. For there is more to the whole than the parts, namely the structure of peripherality relations that connect them. In the stack image: you cannot know just by considering each book in a stack which one will be on bottom and which one on top. The order of the books is an additional piece of information you will need in order to account for the whole. Attentional organization thus is inconsistent with atomism.

Someone might object: but aren’t the phenomenal peripherality relations themselves experiential parts of attention systems? If so, then it would seem that atomism can be rescued. Reply: first, consider the chemical bonding relation between the ions that form a hydrochloric acid molecule for comparison (see Johnston 2006 and Section 1.3 above). Is the chemical bonding relation a part of this hydrochloric acid molecule? Saying that it is threatens to generate a vicious regress, since what binds that formal part (the bonding relation) to the material parts (the ions)? We would need another binding relation. But then that seems to be a formal part of the whole too. So, we need another one. Etc.²⁵ Second, even if we were to think of peripherality relations as formal parts of attention systems, they would not be *experiential* parts. The holding of a peripherality relation between two experiences is not modally separable from those experiences. It cannot – as a phenomenal property – exist independently of its relata: the relation depends for its phenomenal contribution on something that it relates, and so unlike the relata it is not an independent experience that “may be consider’d as separately existent” (Hume, *op. cit.*).

So, we are right to reject atomism.

Does the rejection of atomism imply that holism is true of attention systems? Not directly. Consider our stack of books again. It would be wrong to think that the existence or identity of the individual books, for example, depended on the whole in which they are stacked. But the stack isn’t a mere plurality of books either. The stack is a structured plurality. In order to account for facts about the whole, we need the facts about the parts as well as the facts about the relations between the parts. This suggests an attractive picture for how to think about attentionally structured experiences. It is the following.

²⁵ There might be ways of solving this issue (e.g. to say that the bond of instantiation of properties and relations by particulars does not need a further principle of unity). See Paul (2002).

Attentional Construction Facts concerning experiential wholes are partially grounded in facts concerning their experiential parts and partially grounded in facts concerning the attentional connectedness of those parts.

Attentional construction is compatible with both the claim that attentional connectedness is a contingent feature of experiential wholes, as well as with the claim that it is an essential feature of them. On the *contingency* conception, attention is a mental capacity that is distinct from the capacity for experience. Either it causes experience to have structure – like a librarian that stacks the books; or it is experiential structure – like the stacking itself. On the *essentialist* conception, by contrast, the capacity for attention would be essential for the capacity for experience. Attentional structure would be for experience what chemical binding is for molecules. It is part of what it is for something to be an experience.

I will argue for the essentialist conception in the next section. What matters for present purposes is that on either interpretation attentional construction is not a form of holism: the existence or identity of the books is independent of the stack in which they are embedded; and the existence and identity of a molecule's atoms is independent of the molecule of which they are a part. Similarly, the existence of the parts of an attention system would be independent of the attention system in which they are embedded. The relata of an attention system (the experience of the saxophone, the experience of the itch, etc.) thus could have existed without that attention system, and so they are not grounded in the existence of the attention system.

Chudnoff (2013) offers an argument that attentional construction is mistaken. I will now consider this argument.

The argument is based on a phenomenological observation. Think of one specific peripheral experience of the sound of a saxophone. This very experience has a highly specific phenomenal character. There is the specific subjective loudness and timbre of the saxophone, the particular distance at which I am experiencing it, etc. Further, and importantly for present purposes, it seems that the peripherality of the experience strongly contributes to its phenomenal character as well. It would seem to have been a quite different experience, had I focused on the saxophone instead of my itch. For this reason Chudnoff thinks that it is plausible that “an experience has its phenomenal character in part because of its location in the centrality ordering [=attention system]” (Chudnoff, op. cit., p. 572). On the basis of this phenomenological observation Chudnoff holds the following.

Phenomenal Holism The fact that an experiential part has the phenomenal properties it has is partially grounded in the fact that it has a specific position in an attention system.

We have seen above that attentional connectedness is external_{intrinsic}, i.e. its instantiation is not fully grounded in the intrinsic properties of the relata. If this is true, and if phenomenal holism is also true, then the phenomenal properties of an experience cannot in general be intrinsic to it since they depend on its peripherality

relations to other experiences. The phenomenal character of each experience in an attention system will be partially determined by its position in the attention system. The parts thus turn out to be a little bit like monads – carrying within them already the whole system. Each of them would have had a different phenomenal character if even one of them went out of existence.

Chudnoff continues his argument for holism with the assumption that its phenomenal properties are essential to an experience. That is: with different phenomenal properties it would be a different experience. This assumption is plausible (it also follows if we individuate experiences as triples of phenomenal properties, subjects and times). So, its phenomenal properties are essential to an experience but not intrinsic to it. Attentional connectedness thus, on Chudnoff's view, turns out to be a relation that while $\text{external}_{\text{intrinsic}}$ is *internal* in the sense of being *essential* to its relata (Schaffer (2010b, p. 349) calls such relations $\text{internal}_{\text{essential}}$).²⁶ And so each part of an attention system exists only if the attention system exists. We thus have holism.

Attention System Holism The fact that an experiential part of an attention system exists is grounded in the fact that this attention system exists.

On Chudnoff's conception none of my current experiences could have existed with even the smallest difference in my attention. For each experience, its position in the attention system in which it is embedded is essential to it. This might seem too strong, even if one is attracted to the general picture.

The position can be weakened though, and holism might still follow. Consider the claim it is essential to a fringe experience that it is a fringe (and so nothing is peripheral to it), while its exact position in the attention system is not essential to it (it is not essential, for example, how *many* other experiences are less peripheral than it, or whether exactly one experience is central). Generally, one might hold – following Chudnoff's line of thought – that it is essential to the phenomenal character of an experience whether it is a center, in the field or at the fringe of a field of consciousness. Since each experience is either center, field or fringe, we would have modal constraints on any two experiences within an attention system. Consider a central itch experience e_c and a field-like saxophone experience e_f : there is no possible situation in which both e_c and e_f are central. Or consider two field experiences: there is no possible situation where one of them is at a center. Generally, for any two experiences in an attention systems certain possibilities are ruled out for how they together could be. In this case, attentional connectedness would not be $\text{internal}_{\text{essential}}$, yet still *modally constraining*. Schaffer 2010b calls such relations $\text{internal}_{\text{constraining}}$.

Schaffer (2010b) argues that holism about some whole follows if all its parts are connected by such an $\text{internal}_{\text{constraining}}$ relation. The argument for holism, though, now gets more complex and relies on more controversial subsidiary assumptions (including assumptions about how modal constraints need to be grounded). We would

²⁶ He provides the following definition: R is $\text{internal}_{\text{essential}} =_{\text{Def}} \forall x_1 \dots x_N$ (if $Rx_1 \dots x_N$ then necessarily $((x_1 \text{ exists iff } Rx_1 \dots x_N) \ \& \ \dots \ \& \ x_N \text{ exists iff } Rx_1 \dots x_N))$

arrive at attention system holism thus either from Chudnoff's strong conception of phenomenal holism, or from the weaker conception outlined in the last paragraph together with the somewhat more controversial additional assumptions found in Jonathan Schaffer's work on holism about the physical universe.²⁷

Attention system holism is an interesting and distinctively new form of holism about experience.

First, it seems more plausible than forms of holism that suggest that all phenomenal *qualities* are strongly holistic as proposed by Sprigge (1983) (e.g. the saxophone would have sounded somewhat differently in a ever so slightly different context). In the case of those phenomenal qualities it seems that the relevant influence from the whole to the phenomenal qualities of the parts often is better construed as causal rather than constitutive: my itch experience might cause the saxophone to sound differently to me, but I could have had an experience of the saxophone with the same phenomenal quality even without the itch (see Dainton, 2000, 2010). In the case of attentional structure the claim that it is, for example, constitutive of my saxophone experience that it is peripheral seems much more appealing.

Second, attentional structure holism is more substantive than the form of holism proposed by Dainton (2000, 2010). On Dainton's view all experiences that are phenomenally unified are related by what he calls the co-consciousness relation. This co-consciousness relation is *internal_{essential}*: it is essential to this very saxophone experience that is its co-conscious with the itch experience. From the *internal_{essential}* character of the co-consciousness relation we get holism by the same reasoning as above. Yet, given the austerity of the proposed co-consciousness relation (it makes no distinctive phenomenal contribution), it is hard to find any reason for deciding whether to think of it as an *internal_{essential}* (or *internal_{constraining}*) rather than as an *external_{essential}* phenomenal relation. For comparison, consider someone who proposed that holism about the physical universe is true because all objects in the universe bear the relation *being parts of the same universe* to each other *and that relation is internal_{essential}*. This would be unconvincing, since there seems to be nothing to decide whether *being parts of the same universe* is indeed *internal_{essential}* rather than an external relation (so that an object could exist in a different universe).²⁸ The same seems to hold for the co-consciousness relation. By contrast, attentional connectedness makes a distinctive phenomenal contribution. The suggestion that the peripheral saxophone experience could not have been central thus – as Chudnoff suggests – does have at least intuitive pull.

Nevertheless, it remains unclear why we should choose attention systems holism over attentional construction. The crucial question is: is it really true that the phenomenal character of a peripheral experience itself depends on its being peripheral?

²⁷ Thanks to an anonymous referee for improving the argument from the last paragraphs.

²⁸ Schaffer (2010b) does suggest that the relation of *being worldmates* is *internal_{constraining}*. But his argument relies on a prior commitment to counterpart theory, and is thus not as unconvincing as the view proposed in the main text.

Attentional construction and attention system holism agree that the phenomenal character of an experiential whole with a different attentional organization would be different. But one (attentional construction) says that this phenomenal difference does not constitute a phenomenal difference in the phenomenal character of each part, while the other (attention system holism) says that it does. It is unclear how that question might be resolved. Consider again my experience of exactly that specific saxophone sound. That experience seems to instantiate a specific phenomenal property that is given by the exact appearance of that sound. To that specific phenomenal property Q it is *not* essential whether the experience that instantiates it has one or a different position in an attention system. But then given the conception of experiences as triples of phenomenal properties, subjects and times there is an experience that is the following triple $\langle \text{me}, t, Q \rangle$. To that experience its position in the attention system is not essential. The defender of phenomenal holism must deny that we can individuate experiences in terms of phenomenal properties like Q . But it is hard to see why this individuation is illegitimate (it is maximally specific, after all). The same can be done for *any* experience. But if experiences are individuated in the way presently suggested, then peripherality relations will not be modally constraining. The experiences that form an attention system could have existed without that attention system.²⁹

In the absence of further arguments for thinking that peripherality relations must be thought of as modally constraining, and that we must individuate experiences in such a way as to make their positions in attention systems essential to them, the argument from attentional organization to attention system holism thus remains inconclusive.

5 Attentional Organization and the Principle of Unity for Experience

So far, we have seen that attention systems bind the parts of an experience together so that they do form a phenomenal whole (Section 3). In the last section I found the evidence inconclusive concerning whether these wholes are metaphysically prior to their parts. Attentional construction seems as plausible as attention system holism. I will now look further into attentional construction and argue for the essentialist conception on which the holding of attentional structure between some elements is indeed what *makes* a conscious experience. Attentional construction is not like the stacking of books, but is to experience what chemical binding is for molecules. It is part of the form of experience. The conclusion of this argument thus is that attentional connectedness forms a principle of unity for experience: the attentional organization of a whole is essential to that whole *being a conscious experience*. The claim, to remind ourselves, is this.

²⁹ This issue that plagues Chudnoff's argument for phenomenal holism, *mutatis mutandis* also arises for Barry Dainton's (2010) argument.

Attentional Essence What it is for consciousness to be is for a subject's qualitative states to form an attention system.

One form of argument for this claim would be empirical. To this effect one might consider the wealth of evidence to the effect that attention is *necessary* for consciousness (for recent reviews see Cohen et al. 2012; De Brigard and Prinz 2010; Prinz, 2012). One might use these findings to argue that this amounts to an empirical discovery of what consciousness is (just like one might empirically discover what water is). From there, one might suggest that an integration of various brain processes is essential to attention (see Prinz, 2012, 2013), and that such an integration underpins attentional organization. Along such lines one might thus construct an empirical argument to the effect that attentional organization is essential for consciousness. One way to look at this would be as an *a posteriori* discovery of what is essential to consciousness, or of what it is for something to be a conscious experience. An argument of this form can be found in Prinz (2013).

It is indeed important that the empirical evidence suggests that there is a tight link between attentional brain processes and consciousness. Whether any of this amounts to a discovery of the *essence* of consciousness depends, at least, on the acceptance of materialism, and further on whether the empirical essence of consciousness is to be found on the level attentional processing. In what follows I propose an *a priori* argument for the attentional essence claim that is independent of those commitments. If sound, this argument shows that we are justified to think that attention is essential to consciousness prior to any empirical research.³⁰

In this section I will first sketch the argument for this conclusion informally, then show how to formalize it, and defend its crucial premise.

Let us start by considering that the topic of phenomenal consciousness is naturally introduced by speaking of *perspectives* or *points of view*. Thomas Nagel (1974) introduces the “what it is like” locution in just those terms:

Every subjective phenomenon is essentially connected with a single point of view” (p. 437) “[...] In the case of experience [...] the connection with a particular point of view seems much closer. It is difficult to understand what could be meant by the objective character of an experience, apart from the particular point of view from which its subject apprehends it. After all, what would be left of what it was like to be a bat if one removed the viewpoint of the bat? (p. 443)

³⁰ Given this armchair character and given that the connection between attention and consciousness is – as mentioned in the last paragraph – generally thought to be discovered empirically, the question arises how, if at all, to square both of these ideas. How could it both be true that we can have armchair knowledge that attention is essential to consciousness *and* that it is an empirical question whether attention is even necessary for consciousness? We have here an instance of what Martin Davies (2003) called “The Problem of Armchair Knowledge.” Any solution of this problem is probably quite general. It will be a matter of future investigation to see how it treats the case of attention and consciousness.

Or here is Tim Crane (2001) introducing the very idea of mental phenomena.

What the daffodil lacks and the ‘minded’ creature has is a *point of view on things* or (as I shall mostly say) a *perspective*. [...] A creature with a perspective has a world. But to say that a creature with a perspective *has* a world is not to say that each creature with a perspective has a different world. Perspectives can be perspectives on one and the same world. But at the moment we are interested in the idea of a perspective, and not so much in the idea of a world. (p. 4)

These quotes illustrate the intuitive idea that it is essential to consciousness that it provides the subject with a point of view or perspective. To be in a conscious state just is to have a conscious point of view or perspective. Again, this should not be construed as a reductive definition (“conscious” occurs on the right hand side); it simply states a constitutive link between what it is to be conscious and what it is to have a point of view. Consciousness does not just seem to be essentially connected to having a bearer, but also with that bearer having a point of view or perspective.

The notion of a perspective or point of view, when applied to the mind in general or consciousness in particular, is used somewhat metaphorically (as Crane explicitly acknowledges in the passage that follows the one just quoted). The clearest literal use is in perspectival drawings. Given that we are not after reductive definitions this shouldn’t disturb much. The question is: what is the structure that consciousness and perspectival drawings share so that the metaphor is apt and gets at the notion of consciousness?

In rough outlines perspectival drawings have a certain kind of spatial organization. They use a variety of means (which vary for different types of perspective) in order to convey on a two-dimensional canvas a three dimensional scene. The scene gets organized into foreground and background, those things that are closer to the viewer and those things that are relatively further away. What generates a *perspective* is exactly the viewer-relative separation of what is front and what is back.

In what sense then do a variety of experiences compose a single *perspective*? What is the relevant similarity between consciousness and perspectival drawings?

I claim that it is a form of quasi-spatial character of consciousness. Consciousness forms such a perspective or point of view because it has a foreground/background structure just like literal perspectives (consider also the common notion of a *field* of consciousness).³¹

³¹ E.g. consider Searle (2000): “All conscious experiences at any given point in an agent's life come as part of one unified conscious field. [...] This combined feature of qualitative, unified subjectivity is the essence of consciousness and it, more than anything else, is what makes consciousness different from other phenomena studied by the natural science” (p. 574).

We need “quasi” here because it is not plausibly essential to consciousness that it has literally spatial structure (think of moods, monaural hearing, conscious thought, etc.); furthermore, even when we consider spatial experiences, it seems possible that these do not form a single unified spatial field.³² So, what is that quasi-spatial foreground/background character of consciousness?

Attention systems seem to have the right structure to make a spatial notion of perspective apt. They are structured into foreground and background or center and periphery. William James puts it like this.

Without selective interest [attention], experience is utter chaos. Interest alone gives accent and emphasis, light and shade, background and foreground – intelligible perspective, in a word. (James, 1890/1981, p. 402)³³

Attention systems have a field character: they have a boundary (the fringe) and they have internal structure. As I have suggested, the relevant form of foreground and background can arguably not be reductively defined. This is exactly what we should expect if it were part of what makes something a conscious perspective. The perspectival character of consciousness then would consist in the fact that experiencing is attentionally organized.

For further support, consider that it is natural to think of a *genuine* or *natural* part of an experience as one that could be at the center of attention (in the same way as the two ions are genuine or natural parts of the hydrochlorine molecule). Not every way of dividing up a subject’s total experience corresponds to such a genuine part. Think of the aspect that “corresponds” to how loud the Jazz sounds to me together with the one that “corresponds” to my complete itch experience: there is a phenomenal property here, and yet we seem to have a merely arbitrary division within consciousness. By contrast the melody experience, the phenomenal intensity of the itch, the experience of the itch, the feeling of elevation, the peculiar way the elevation “sinks into” my bodily sensations seem to be genuine parts of my experience, precisely because these are aspects of my experience that can occupy my attention (i.e. be central within my experience). The attention structure of experience thus is naturally thought to provide a non-arbitrary division of a total experience.

We can collect these observations and construct the following argument for the claim that being an attention system provides the principle of unity for consciousness. I call it *The Perspective Argument*.

³² Dainton (2006) and Bayne (2010) consider various cases of what seem to be phenomenally unified experiences (or total conscious points of view) that are nevertheless spatially dis-unified.

³³ This quote might suggest that James thinks that there is experience without attention. It just would not provide an “intelligible” perspective. The quote’s context (a criticism of the empiricist notion of experience) suggests, I believe, that the intended reading of the first quoted sentence is: without selective interest experience *would be* utter chaos, used in an argument by reductio ad absurdum against the (empiricist) notion of experience.

The Perspective Argument

1. What it is for conscious experience to be is for a subject to have a perspective or point of view.
2. What it is for a subject to have a perspective or point of view is for its qualitative states or events to be structured by a type of foreground and background relation.
3. What it is for a subject's mental states or events to be structured by a type of foreground and background relation is for those qualitative states or events to be attentionally organized.
4. What it is for a subject's mental states or events to be attentionally organized is for those qualitative states or events to form an attention system.
5. What it is for consciousness to be is for a subject's qualitative states or events to form an attention system [from 1-4]

The perspective argument derives the claim that being an attention system provides the principle of unity for consciousness from four premises.

(1) is supposed to be intuitive. It is illustrated by the introductions to the topic of consciousness I have quoted above. (3) can be supported by ruling out other candidates of foreground and background relations. The only other candidate foreground and background relations seem to be spatial ones. But the possibility of spatially disconnected experiences as well as the possibility of non-spatial experiences rule those out (since if something is part of what it is for some X to be, then it must be necessary for X). Attentional relations are the most general non-reductive foreground/background relations. (4) has been defended in Section 2 of this paper by providing an account of attentional organization in terms of the notion of attentional connectedness (for more detail see Watzl, 2011, forthcoming)

The most controversial premise is (2).

Let us then consider why we should think that what it is for a subject to have a point of view or perspective is for her mental states or events to be structured into foreground and background.

I have already suggested that this is the most natural understanding of the notion of a perspective or point of view. It is what we get by staying as close as possible to the literal spatial meaning of the "perspective" terminology (again: it is no objection to premise 2 that the notion of a perspective in the first premise is used metaphorically. This much is acknowledged by everyone. The question is: in virtue of what is the metaphor apt?).

One might object that the metaphor only points to *paradigm cases* of conscious experience and not to anything that is *essential* to consciousness. This objection is misguided. The metaphor is apt (and used by Nagel, Crane and others) to describe even cases of conscious experience that are far removed from spatial experiences: consider moods, nausea, pain, or conscious thought. All of these are aptly described

as shaping the subject's subjective point of view. The metaphor is no more stretched here than in the case of vision or bat echolocation.

But, one might argue, the foreground/background interpretation is not the only salient way of extending the literal idea of a perspective for the context of mentality. The other salient alternative would seem to be the *intentional* character of consciousness. Crane (op. cit.) speaks of the directedness and aspectuality of mental states. Mental states intentionally present something (directedness) that is given to the subject in a certain way (aspectuality, or mode of presentation). An obvious alternative to 2 thus would thus seem to be something like the following.

2* What it is for a subject to have a perspective or point of view is for its mental states or events to present something to her under a certain mode of presentation.

We can call 2* the *intentionalist interpretation* of the perspectival character of consciousness. 2*, no doubt, will have a fair share of sympathy among defenders of intentionalism about consciousness, who hold that all conscious states are intentional. Indeed, one might think of 2* as an element in an a priori argument for intentionalism that derives it as an essential characteristic of consciousness from the claim that consciousness consists in a subject's having a perspective or point of view.

One form of objection to the 2* alternative to 2 would be an objection to intentionalism by pointing to conscious states like pain, nausea, or mood that, while providing their subjects with a subjective point of view, do not present anything under a mode of presentation.³⁴ It seems to me plausible that there are such non-intentional conscious states (e.g. Block, 2003). If there are, then 2* fails. The perspectival character of consciousness cannot be explicated in terms of its intentional character.

Yet, even if all conscious states were intentional, objections to 2* remain. Aspectual intentional directedness fails to fully capture the perspectival character of consciousness.

First, 2* does nothing to capture the fact that consciousness forms a *unified field*, or that it has a *boundary, fringe* or *margin*. The intentionalist interpretation thus leaves out the connection between the perspectival character of consciousness and the idea that each subject has a *single* unified subjective perspective. The intentionalist interpretation thus cannot explain why the perspectival character of consciousness and its unity go together.

Second, the intentionalist interpretation also leaves out an important element of what makes conscious perspectives *subjective*: what a mental state is directed at and the mode with which that object is presented appear to the subject as aspects of the mind-independent world. These concern the worldly objects, their appearances, the lighting conditions, spatial relations between subject and those objects etc. Consider looking at a penny from an angle: the penny will look to be round, but also appear elliptical:

³⁴ Indeed, only something weaker would be required here: one need not argue that there *actually* are cases of non-intentional conscious states, but only that it is *not essential* for something to be a conscious state that it is intentional.

the elliptical appearance of the penny will not appear to the subject as an aspect of the her subjective take on things, but as a feature of the penny – *in those circumstances*.³⁵ Neither intentional objects nor their modes of presentation thus are essentially subjective. By contrast, attentional structure exactly concerns the subject's own contribution to consciousness. It is an aspect of consciousness that, unlike appearances, does not even appear to be part of the mind-independent world. It is transparently a *subjective* aspect of consciousness.

There is a more positive line of support for 2 as well. This concerns the essential *differentiation* of consciousness (Tononi, 2008). According to the foreground/background interpretation consciousness is essentially structured. A completely undifferentiated experience seems impossible exactly because it would not provide the subject with anything resembling a point of view or perspective. Without differentiation within an alleged subjective perspective, we do not get the sense that there *is* a subjective perspective there. This is, I take it, part of what makes it hard to conceive of the consciousness of a photo-diode (Tononi, 2008). But the relevant differentiation cannot just be in what is given to the subject (the world she is presented with in consciousness and its various appearances), since the differentiation must be from the subject's own point of view. This seems to me what William James was after in the quote above when he said that conscious perspectives are *intelligible*.

Overall, then, there are several plausible lines of support for the view that the perspectival character of consciousness consists in a type of foreground/background relation. Together with the other premises we thus have a plausible argument for the attentional essence claim. There thus is an *a priori* argument for a view that is also empirically plausible: that attention is essential to consciousness and that attentional structure is part of what it is for conscious experience to be.

6 Conclusion

Let me conclude. I have considered the relationship between part and whole in experience by focusing on the attentional organization of consciousness. After sketching an account of that organization, I have argued that such organization is sufficient for the unity of consciousness. I have then considered an argument that attempted to show that holism about consciousness follows from its attentional organization. I have found that argument to be inconclusive. I have then argued that attentional organization provides the principle of unity for experience. Attention is part of what it is for a subject to be conscious at all. Attentional connections create a unified subjective perspective out of qualitative states.

³⁵ In work currently under review I argue, following Chalmers (2006), that each appearance can be phenomenally matched in an *Edenic* world by a way that Edenic world actually is.

Bibliography

- Allport, D. A. (1987). Selection for action, In: H. Heuer and H. F. Sanders (Eds.), *Perspectives on Perception and Action*, Lawrence Erlbaum Associates Inc.
- Arvidson, P. S. (2006). *The sphere of attention: Context and margin*. Springer.
- Bayne, T. (2005). Divided brains and unified phenomenology: A review essay on Michael Tye's *Consciousness and Persons*. *Philosophical Psychology* 18 (4), 495-512.
- Bayne, T. & Chalmers, D.J. (2003). What is the unity of consciousness? In A. Cleeremans (ed.), *The unity of consciousness*. Oxford University Press.
- Bayne, T. (2010). *The unity of consciousness*. Oxford University Press.
- Block, N. (1980). Troubles with functionalism. *Readings in philosophy of psychology*, 1, 268-305.
- Block, N. (1995). On a confusion about a function of consciousness. *Brain and Behavioral Sciences* 18 (2), 227-247.
- Block, N. (2003). Mental paint. In M. Hahn and B. Ramberg (eds.), *Reflections and replies: Essays on the philosophy of Tyler Burge*, Bradford Books, 165-200.
- Brentano, F. (1874/1973). *Psychology from an empirical standpoint*. Routledge.
- Crane, T. (2001). *Elements of mind: An introduction to the philosophy of mind*. Oxford University Press.
- Chalmers, D. J. (2006). Perception and the fall from Eden. In T. S. Gendler and J. Hawthorne (eds.), *Perceptual Experience*. Oxford University Press
- Chudnoff, E. (2013). Gurwitsch's phenomenal holism. *Phenomenology and the Cognitive Sciences* 12 (3), 559-578.
- Cohen, M. A., Cavanagh, P., Chun, M. M., & Nakayama, K. (2012). The attentional requirements of consciousness. *Trends in cognitive sciences*, 16(8), 411-417.
- Dainton, B. (2000). *Stream of consciousness: Unity and continuity in conscious experience*. Routledge.
- Dainton, B. (2010). Phenomenal holism. *Royal Institute of Philosophy Supplement*, 67, 113-139.
- Dasgupta, S. (2013). Absolutism vs. Comparativism about Quantity. In: *Oxford Studies in Metaphysics*, Vol. 8
- Davies, M. (2003). The problem of armchair knowledge. In Susana Nuccetelli (ed.), *New Essays on Semantic Externalism and Self-Knowledge*. MIT Press, 23-55
- De Brigard, F., & Prinz, J. (2010). Attention and consciousness. *Wiley Interdisciplinary Reviews: Cognitive Science*, 1(1), 51-59.
- Desimone, R., & Duncan, J. (1995). Neural mechanism of selective visual attention. *Annual Review of Neuroscience*, 18, 193-222.

- Dacey Jennings, C. (2012). The subject of attention. *Synthese* 189 (3), 535-554.
- Fine, K. (1995). Senses of Essence, In: W. Sinnott-Armstrong, D. Raffman, and N. Asher (eds.). *Modality, morality, and belief: Essays in the honor of Ruth Barcan Marcus*. Cambridge University Press, 53-73
- Fine, K. (1999). Things and their parts. *Midwest Studies in Philosophy* 23 (1), 61–74.
- Fine, K. (2012). Guide to Ground. In F. Correia and B. Schnieder (eds.), *Metaphysical Grounding*. Cambridge University Press. 37-80.
- Frith, U. (2003). *Autism: Explaining the enigma*. Wiley-Blackwell
- Gurwitsch, A. (1979/2009). The field of consciousness, Reprinted in: Zaner, R.M. (ed.): *The Collected Works Of Aron Gurwitsch (1901-1973): Volume III: The Field Of Consciousness*. Springer.
- Gurwitsch (1929/2009). Phenomenology of Thematics and of the Pure Ego. Reprinted in: Kersten, F. (ed.): *The Collected Works Of Aron Gurwitsch (1901-1973): Volume II: Studies in Phenomenology and Psychology*. Springer, 193-317
- Hume, D. (1739/2000). *A treatise of human nature*. Oxford University Press.
- James, W. (1890/1981). *The principles of psychology*. Harvard University Press
- Johnston, M. (2006). Hylomorphism. *Journal of Philosophy* 103, 12, 652-698.
- Kentridge, R.W., Heywood, C.A., & Weiskrantz, L. (1999). Attention without awareness in blindsight, *Proc. R. Soc. Lon. B*, 266, 1805-1811
- King, J. (2007). *The nature and structure of content*. Oxford University Press
- Koffka, K. (1922). Perception: An introduction to the Gestalt-theorie. *Psychological Bulletin*, 19(10), 531-585.
- Koslicki, K. (2008). *The structure of objects*. Oxford University Press.
- Lee, G. (forthcoming). Experiences and their parts. In D. Bennett & C. Hill (eds.), *Sensory Integration and the Unity of Consciousness*. The MIT Press.
- Lewis, D. (1986). *On the plurality of worlds*. Basil Blackwell
- Mack, A. & Rock, I. (1998). *Inattentional blindness*, The MIT Press
- Masrour, F. (forthcoming). Unity of consciousness: In defense of a Leibnizian view. In: D. Bennett & C. Hill (eds.), *Sensory Integration and the Unity of Consciousness*. The MIT Press.
- Mole, C. (2010). *Attention is cognitive unison: An essay in philosophical psychology*. Oxford University Press
- Nagel, T. (1974). What is it like to be a bat? *The Philosophical Review*, 83, 435-450.
- Neumann, O. (1987). Beyond capacity: A functional view of attention, In: H. Heuer and A. F. Sanders (Eds.), *Perspectives on perception and action*, Erlbaum
- Paul, L. A. (2002). Logical parts. *Noûs* 36 (4), 578–596.

- Peacocke, C (2014). *The mirror of the world: Subjects, consciousness, and self-Consciousness*. Oxford University Press
- Prinz, J. (2012). *The Conscious Brain*. Oxford University Press
- Prinz, J. (2013). *Attention, Atomism, and the Disunity of Consciousness*, *Philosophy and Phenomenological Research*, 86 (1), 215-222
- Quinlan, P. T. (2003). Visual feature integration theory: Past, present, and future, *Psychological Bulletin*, 129(5), 643-673
- Schaffer, J. (2010a). The internal relatedness of all things. *Mind* 119 (474), 341 - 376.
- Schaffer, J. (2010b). Monism: The priority of the whole. *Philosophical Review* 119 (1), 31-76.
- Schaffer, J. (2009). On what grounds what. In D. Manley, D. J. Chalmers & R. Wasserman (eds.), *Metametaphysics: New Essays on the Foundations of Ontology*. Oxford University Press, 347-383.
- Smithies, D. (2011). Attention is Rational-Access Consciousness. In C. Mole, D. Smithies & W. Wu (eds.), *Attention: Philosophical and Psychological Essays*. Oxford University Press. 247-273.
- Searle, J., (2002). Consciousness. In J. Searle. *Consciousness and Language*. Cambridge University Press.
- Sprigge, T. L. (1983). *The vindication of absolute idealism*. Edinburgh University Press.
- Tononi, G. (2008). Consciousness as integrated information: a provisional manifesto, *The Biological Bulletin*, 215(3), 216-242
- Treisman, A. (1998). Feature binding, attention and object perception, *Phil Trans R. Soc London B*, 353, 1295-1306
- Watzl, S (2011). Attention as Structuring of the Stream of Consciousness. In C. Mole, D. Smithies & W. Wu (eds.), *Attention: Philosophical and Psychological Essays*. Oxford University Press, 145-173
- Watzl, S. (forthcoming). *Attention and the Structures of Consciousness*, Oxford University Press.
- Wu, W. (2011). Attention as Selection for Action. In C. Mole, D. Smithies & W. Wu (eds.), *Attention: Philosophical and Psychological Essays*. Oxford University Press, 97-116.
- Van Inwagen, P. (1990). *Material Beings*. Cornell University Press
- van Leeuwen, C., Alexander, D., Nakatani, C., Nikolaev, A. R., Plomp, G., and Raffone, A. (2011). Gestalt has no notion of attention. But does it need one?. *Humana Mente*, 17, 35-68.

Yantis, S. (1992). Multielement visual tracking: Attention and perceptual organization. *Cognitive psychology*, 24(3), 295-340.