

Elijah Chudnoff

University of Miami

### Phenomenal Contrast Arguments for Cognitive Phenomenology<sup>1</sup>

**Abstract:** According to proponents of irreducible cognitive phenomenology some cognitive states put one in phenomenal states for which no wholly sensory states suffice. One of the main approaches to defending the view that there is irreducible cognitive phenomenology is to give a phenomenal contrast argument. In this paper I distinguish three kinds of phenomenal contrast argument: what I call pure—represented by Strawson’s Jack/Jacques argument—hypothetical—represented by Kriegel’s Zoe argument—and glossed—first developed here. I argue that pure and hypothetical phenomenal contrast arguments face significant difficulties, but that there is a sound glossed phenomenal contrast argument for irreducible cognitive phenomenology.

Imagine being in the following situations:

[Understanding] You are trying to read the instructions for a medicine a veterinarian prescribed for your dog. At first it is illegible. Then you see that it says to administer the medicine twice daily for one week.

[Intuiting] In a book you read, “If  $a < 1$ , then  $2 - 2a > 0$ ,” and you wonder whether this is true. Then you “see” how  $a$ ’s being less than 1 makes  $2a$  smaller than 2 and so  $2 - 2a$  greater than 0.

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[Seeing] You are looking for your dogs in the dog park. At first you cannot pick them out of the mass of other dogs. But then you see them there chasing a tennis ball.

[Reacting] In the news you read about a factory building collapsing on Bangladeshi garment workers who were ordered to work despite warnings about the safety of the building. This makes you sad and angry.

In the first two of these situations there is a change in cognitive state. At first you do not understand or intuit. And then you do. In the second two of these situations there is a change in broadly sensory state. At first you do not see or emotionally react. And then you do.

In all of these situations there is a change in phenomenal state. There is something it is like for you before understanding, intuiting, seeing, or reacting. There is something it is like at the moment of understanding, intuiting, seeing, or reacting. And what it is like before being in these mental states is different from what it is like while being in these mental states.

The main question in the recent literature on cognitive phenomenology is, to a first approximation, this: are the changes in phenomenal state exhibited in the first two cases different in kind from the changes in phenomenal state exhibited in the second two cases? Proponents of irreducible cognitive phenomenology say yes. Opponents say no.

Proponents of irreducible cognitive phenomenology have appealed to a number of different arguments for their view. Some are arguments from the best explanation of introspective access to cognitive states, others are arguments from the interestingness or value of cognitive states, and still others are arguments from the role of cognitive states in grounding intentionality.<sup>2</sup> My aim in this paper is to explore the prospects of a different group of arguments, what are called phenomenal contrast arguments.<sup>3</sup>

In this paper I distinguish three sorts of phenomenal contrast argument. All rely on premises about the phenomenal characters of some mental states. Arguments of the first sort rely solely on premises about the phenomenal differences between mental states. I will call these pure phenomenal contrast arguments. In my view these arguments are not that strong. Arguments of the second and third sort represent different ways of strengthening the phenomenal contrast approach to arguing for irreducible cognitive phenomenology. Arguments of the second sort rely on premises about phenomenal differences between the mental states of hypothetical people that lack all sensory phenomenology. I will call these hypothetical phenomenal contrast arguments. In my view these arguments are problematic. Arguments of the third sort do not rely solely on premises about the phenomenal differences between mental states. They also rely on premises that

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<sup>2</sup> See, for example, (Pitt 2004) for an argument from introspection, Strawson (2011) for an argument from interestingness, and (Horgan and Graham 2012) for an argument from grounding intentionality.

<sup>3</sup> Phenomenal contrast arguments are sprinkled throughout the literature. Notable early examples include (Strawson 1994), (Siewert 1998), (Horgan and Tienson 2002). They are discussed in a number of the papers collected in (Bayne and Montague 2011). The term “phenomenal contrast” derives from Susanna Siegel. See (Siegel 2007, 2010).

provide a gloss on these phenomenal differences. I will call these glossed phenomenal contrast arguments. In my view there is a sound glossed phenomenal contrast argument for Irreducibility.

Here is the plan. In the first section below I explain how I am using terms such as “phenomenal state” and “irreducible cognitive phenomenology,” and I distinguish some different theses in the area. Each of the next three sections deals with one of the three sorts of phenomenal contrast argument. A final section summarizes the main points in the discussion.

## 1. Terms and Theses

Recall the example of seeing from above:

[Seeing] You are looking for your dogs in the dog park. At first you cannot pick them out of the mass of other dogs. But then you see them there chasing a tennis ball.

There are at least four different things we might say about this case.

First, it is a change in mental state. I will not try to say what a mental state is in more basic terms. I will take it as a primitive. Nothing will hinge on the difference between mental states and mental events, so I will not treat them separately.

The second thing we might say about [Seeing] is that it is a change in phenomenal state. By a phenomenal state I mean a mental state that is individuated by what it is like for one to be in it. What it is like for one to be in a mental state is that mental state's phenomenal character. And to say that its phenomenal character individuates a mental state is to say that there is nothing more and nothing less required for being in that very mental state than being in a mental state with just the same phenomenal character.

In addition to the notion of a mental state that is individuated by its phenomenal character, it is useful to have a notion of a mental state that essentially has some phenomenal character or other, perhaps within a certain restricted range, but that is not individuated by any particular phenomenal character. I will call such states phenomenally conscious mental states.<sup>4</sup>

The third thing we might say about [Seeing] is that there is a change in phenomenally conscious state. On any particular occasion when you see your dogs they look some specific way. But just what way will differ on different occasions. For example, you might see your dogs from their front, back, or side. In each case there is some way your dogs look to you. But the exact way they look to you differs from case to case. Still, in each case you do count as being in the mental state of seeing your dogs. So the state of seeing your dogs is not a phenomenal state. It is an example of a phenomenally conscious state.

The fourth thing we might say about [Seeing] is that it is a change in sensory state, rather than, or at least in addition to, a change in cognitive state. There are

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<sup>4</sup> Cf. (Siegel 2010).

different ways of understanding this distinction, and a full discussion of it would have to be rather lengthy. Here I will just attempt to explain how I understand it and I will just say enough to make the distinction serviceable for present purposes.<sup>5</sup>

Contrast the following two mental states: thinking that there is mail in your mailbox, seeing that there is mail in your mailbox. Let us suppose that the mental states of thinking that there is mail in your mailbox and seeing that there is mail in your mailbox have some common representational content—something common picked out by the clause “that there is mail in your mailbox.” Still there is a clear difference between the mental states: when you see that there is mail in your mailbox the mail seems to be sitting there before you. You both represent that there is mail in your mailbox and are aware of the parts of your immediate environment that make it true that there is mail in your mailbox. The content of the sensory state is tied to what seems present here and now. This need not be so when you think that there is mail in your mailbox. You might very well think that there is mail in your mailbox when you are miles away from your mailbox. The content of the cognitive state is free from what seems present here and now. In my view this observation is the key to drawing the distinction between sensory and cognitive states.

Transforming it into a clear and adequately general characterization of the distinction between sensory and cognitive states takes quite a bit of work. I do not have space to pursue that project here however. For present purposes the following sketch should suffice. When you think that there is mail in your mailbox you represent that there is mail in your mailbox in a way that is independent of current

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<sup>5</sup> For a fuller discussion see (Author XXXX).

awareness of what we might call an environmental witness to that proposition. This characterization gives some structure to the commonsensical idea that thought is free from what seems present here and now. And more generally we might say: a mental state represents that p in a cognitive way just in case it represents that p in a way that is independent of current awareness of an environmental witness to p.

When you see that there is mail in your mailbox—by seeing the mail for example—you represent that there is mail in your mailbox in a way that is dependent on current awareness of an environmental witness to that proposition. This characterization gives some structure to the commonsensical idea that sensation is tied to what seems present here and now. And more generally we might say: a mental state represents that p in a sensory way just in case it represents that p in a way that is dependent on current awareness of an environmental witness to p.<sup>6</sup>

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<sup>6</sup> Consider the following experiences: visually hallucinating that there is mail in your mailbox; visually recollecting mail in your mailbox; visually imagining mail in your mailbox; feeling the thrill of finding mail in your mailbox; feeling your heartbeat speed up as you approach your mailbox. Hallucinations, recollections, imaginings, emotions, and bodily sensations should all count as sensory states in the broad sense that is relevant to debates about cognitive phenomenology. But awareness of environmental witnesses to propositions does not figure in any of them. Even so, states akin to such awareness do: in hallucination there is seeming awareness of one's environment; in recollection and imagination there is recollected and imagined awareness of one's environment; emotions color awareness of one's environment; and bodily sensations involve awareness of one's body which we might count as a limiting case of one's environment. So here is how we might define appropriately adjusted notions of sensory and cognitive ways of representing a proposition: A mental state M represents that p in a sensory way just in case M represents that p in a way that is dependent on current awareness of an environmental witness to p or a state that is akin to such awareness; A mental state M represents that p in a cognitive way just in case M represents that p in a way that is independent of current awareness of an environmental witness to p or a state that is akin to such awareness.

Given these characterizations of sensory and cognitive ways of representing a proposition, it is easy to formulate characterizations of sensory and cognitive states in terms of them. Since many mental states are partly sensory and partly cognitive, really there are four relevant notions. A mental state  $M$  is partly sensory just in case  $M$  represents part of its content in a sensory way. A mental state  $M$  is wholly sensory just in case  $M$  represents all of its content in a sensory way. A mental state  $M$  is partly cognitive just in case  $M$  represents part of its content in a cognitive way. A mental state  $M$  is wholly cognitive just in case  $M$  represents all of its content in a cognitive way.

Now let us consider some theses. Recall the example of intuiting from above:

[Intuiting] In a book your read, “If  $a < 1$ , then  $2 - 2a > 0$ ,” and you wonder whether this is true. Then you “see” how  $a$ ’s being less than 1 makes  $2a$  smaller than 2 and so  $2 - 2a$  greater than 0.

There is a change in cognitive state and there is a change in phenomenal state. Plausibly the change in phenomenal state is somehow due to the change in cognitive state. But this does not show that proponents of cognitive phenomenology are right and opponents of cognitive phenomenology are wrong. Proponents of cognitive phenomenology are committed to a specific thesis that should be distinguished from other nearby theses—some weaker, some stronger, and some orthogonal.<sup>7</sup>

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<sup>7</sup> Cf. (Smithies 2012).



The specific thesis that proponents of cognitive phenomenology endorse implies that some cognitive states make phenomenal differences that are irreducible to those made by sensory states. There are new phenomenal states in addition to wholly sensory phenomenal states. Let us adopt the following official formulation of this view:

Irreducibility: Some cognitive states put one in phenomenal states for which no wholly sensory states suffice.

The idea of a cognitive state putting one in a phenomenal state implicitly invokes the non-causal explanatory relation typically picked out by “in virtue of,” “constitutively dependent on,” and “because,” when used non-causally. We can make this explicit with a more cumbersome formulation of Irreducibility: some cognitive states are such that because one is in them one is in a phenomenal state for which no wholly sensory state suffices. In general when I use locutions such as “put one in” and “make” as in “make a phenomenal difference” I have this sort of interpretation in mind.

I will call phenomenal states for which Irreducibility holds cognitive phenomenal states. If a phenomenal state is such that some wholly sensory states might put one in it, then I will call that phenomenal state a sensory phenomenal state.

So suppose you intuit that if  $a < 1$ , then  $2 - 2a > 0$ . In doing so you might say to yourself, “If  $a < 1$ , then  $2 - 2a > 0$ ,” or you might visualize the variable “a” or the

numeral “1,” or might experience kinesthetic sensations as you think of the quantity assigned to “ $2a$ ” shrinking. These are all sensory phenomenal states. If you believe Irreducibility and you think this case of intuiting is an example of irreducible cognitive phenomenology, then you believe that even taken all together these sensory phenomenal states fail to make the very same phenomenal difference intuiting that if  $a < 1$ , then  $2 - 2a > 0$  makes to your overall experience. There is some phenomenal state left over which only the cognitive state of intuiting that if  $a < 1$ , then  $2 - 2a > 0$ —or maybe a cognitive state very similar to this one—can put you in. This is what it is to believe in cognitive phenomenal states.

Now let us consider a thesis that falls short of Irreducibility. This is the thesis that some cognitive states make phenomenal differences. Unlike Irreducibility this thesis does not add that the phenomenal differences are irreducible to those made by sensory states. Let us adopt the following official formulation of this weaker thesis:

Phenomenal Presence: Some cognitive states put one in phenomenal states.

The thesis of Phenomenal Presence is equivalent to the thesis that some cognitive states are phenomenally conscious. Recall that a mental state is phenomenally conscious just in case if one is in it then it puts one in some phenomenal state or other. Phenomenal Presence implies that some cognitive states are phenomenally conscious in this sense. What it doesn’t imply is that the phenomenal states such

cognitive states put one in are any different from the sorts of phenomenal states sensory states put one in.

Suppose you think that whenever one intuits that  $a < 1$ , then  $2 - 2a > 0$  then one is thereby put in some phenomenal state or other. But suppose you think that these phenomenal states are just those involved in visualizing the variable “a” or the numeral “1,” or those involved in experiencing kinesthetic sensations as you think of the quantity assigned to “2a” shrinking. If this is your view then you think that the intuition is phenomenally present—it makes some phenomenal difference whenever it occurs—but that it does not introduce any new phenomenal states distinct from those that various wholly sensory states might put one in. This view falls short of commitment to irreducible cognitive phenomenology.

Now let us consider a thesis that goes beyond Irreducibility. This is the thesis that some cognitive states make phenomenal differences that are independent of those made by sensory states. Independence is a modal notion: it has to do with what is possible. Two things are independent if they can exist with or without each other—i.e. the existence of one neither includes nor excludes the existence of the other. Let us adopt the following official formulation of this independence thesis:

Independence: Some cognitive states put one in phenomenal states that are independent of sensory states.

Independence is stronger than Irreducibility. That is, Independence entails Irreducibility but Irreducibility does not entail Independence. To see that

Independence entails Irreducibility suppose some phenomenal state P is independent of sensory states. Then being in wholly sensory states does not imply—i.e. suffice for—being in P. To see that Irreducibility does not entail Independence consider a cognitive phenomenal state P that is also partly sensory. Being in wholly sensory states does not suffice for being in P, but one cannot be in P without being in some sensory state.

If you endorse Irreducibility then you think there are cognitive phenomenal states. These are phenomenal states for which wholly sensory states do not suffice. If you endorse Independence then you think there are what we might call purely cognitive phenomenal states. These are phenomenal states for which wholly cognitive states do suffice. If one endorses Irreducibility but rejects Independence then one thinks that even though there are phenomenal states for which wholly sensory states do not suffice, there are no phenomenal states for which wholly cognitive states do suffice. On this view whenever one is in a phenomenal state it is at least in part because one is in a sensory state.

Now let us consider a thesis that is orthogonal to Irreducibility. The literature on cognitive phenomenology intersects with the literature on what is called phenomenal intentionality. Proponents of cognitive phenomenology tend to propound phenomenal intentionality as well. The basic idea of phenomenal intentionality is that for some token mental states their phenomenal characters determine their representational contents. Let us adopt the following official formulation of this thesis:

Phenomenal Intentionality: Some phenomenal states put one in intentional states.

Remember that the “put one in” locution is a way of talking about the sort of relation picked out by “because”: so a more explicit formulation is that some phenomenal states are such that because one is in them one is in an intentional state.

Irreducibility and Phenomenal Intentionality are related but orthogonal. They are related because there are grounds for thinking that the sorts of phenomenal states for which Irreducibility holds—i.e. cognitive phenomenal states—are ones for which Phenomenal Intentionality holds—i.e. such that they put one in intentional states. This is why proponents of cognitive phenomenology tend to propound phenomenal intentionality. The two theses are orthogonal, however, because there are no logical entailment relations in either direction. It is logically consistent to endorse Irreducibility and reject Phenomenal Intentionality and it is logically consistent to endorse Phenomenal Intentionality and reject Irreducibility. What proponents of Irreducibility ought to think about Phenomenal Intentionality depends on substantive considerations that go beyond purely logical reasoning.

So there are four theses to be distinguished: Irreducibility, Phenomenal Presence, Independence, and Phenomenal Intentionality. I see Irreducibility as the main issue in the debate about cognitive phenomenology. Proponents accept it; opponents reject it. It is my main concern in what follows.

## 2. Pure Phenomenal Contrast Arguments

Let's say that a case is an actual or possible scenario in which a subject is in some phenomenal states. A phenomenal contrast is a pair of cases that differ with respect to what phenomenal states their subjects are in.

One reason phenomenal contrasts are useful is that they help draw attention to certain phenomenal states. This was the use I made of them in the introduction, with the examples of seeing, emotionally reacting, intuiting, and understanding. We might call this the ostensive use of phenomenal contrasts. By a phenomenal contrast argument I have something else in mind.<sup>8</sup> The aim of a phenomenal contrast argument is not merely to point to some phenomenal states, but to establish some thesis about the nature of those states. By a pure phenomenal contrast argument I mean an argument that purports to establish such a thesis by reasoning about the mere existence of a phenomenal contrast. These arguments typically take the form of inferences to the best explanation.

Here is a well-known example from the literature:

Philosophers will ask whether there is really such a thing as understanding-experience, over and above visual experience, auditory experience, and so on...This question may be asked: does the difference between Jacques (a monoglot Frenchman) and Jack (a monoglot Englishman), as they listen to the news in French, really consist in the Frenchman's having a different *experience*? ...The present claim is simply that Jacques's experience when

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<sup>8</sup> (Koksvik 2011) also draws a distinction between ostensive and argumentative uses of phenomenal contrasts.

listening to the news is utterly different from Jack's, and that this is so even though there is a sense in which Jacques and Jack have the same aural experience.

It is certainly true that Jacques's experience when listening to the news is very different from Jack's. And the difference between the two can be expressed by saying that Jacques, when exposed to the stream of sound, has what one may perfectly well call 'an experience (as) of understanding' or 'an understanding-experience,' while Jack does not.<sup>9</sup>

The phenomenal contrast consists of the following pair of cases:

Jacques's Case: hearing the news with understanding.

Jack's Case: hearing the news without understanding.

Here is one way we might put the inference to the best explanation:

(1) Jacques's Case and Jack's Case contain different phenomenal states.

(2) Jacques's Case and Jack's Case contain the same sensory states.

(3) Jacques's Case and Jack's Case contain different cognitive states.

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<sup>9</sup> (Strawson 1994), pgs 5 – 6.

- (4) The only candidate explanations for the difference in the phenomenal states are a difference in the sensory states or a difference in the cognitive states.
- (5) The best explanation for the difference in the phenomenal states is the difference in the cognitive states.
- (6) So there are some phenomenal states such that cognitive states and not sensory states put one in them.

This particular phenomenal contrast argument is problematic in three ways. First, premise (2) is dubious. Second, premise (3) is at least questionable. Third, the conclusion (6) falls short of Irreducibility. I will discuss each of these problems below.

I will assume that premises (1) and (4) are OK. Premise (1) comes from the phenomenal contrast, and seems unassailable. Premise (4) can be dispensed with for more nuanced claims, but is a useful and unproblematic simplification in the present context. Claim (5) follows from (1) through (4).

Let us start with premise (2). A number of philosophers have argued that it is false, that the two cases contain different sensory states.<sup>10</sup> For example, Jacques might hear the stream of sounds as structured into words and sentences and he might have visual imagery corresponding to various topics discussed in the news. In response, one might argue that these differences, even if they exist, are not capable of explaining all the phenomenal differences between the two cases. It is worth

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<sup>10</sup> See, for example, (Carruthers and Veillet 2011), (Levine 2011), (Prinz 2011), and (Tye and Wright 2011).



noting that (2) is stronger than the claim Strawson makes. Strawson says that, “there is a sense in which Jacques and Jack have the same aural experience.” This leaves open that there is a sense in which their aural experiences are different, and it also leaves open the possibility of other sensory differences. Strawson’s idea, then, must be that it is not necessary to rule out the possibility of any sensory differences. All the inference to the best explanation requires is that whatever sensory differences there might be are not of the right sort to explain all the phenomenal differences between the two cases. This is surely correct, but it is difficult to see how to adjudicate the debate between someone who thinks there are explanatorily sufficient sensory differences and someone who thinks that whatever sensory differences there might be are explanatorily insufficient. Without some way of settling this issue the pure phenomenal contrast argument does not do much to help the case for irreducible cognitive phenomenology.

Let us turn to premise (3). It is questionable because there are competing views about the nature of linguistic understanding. One view is that it is an at least partly cognitive mental state. On this view premise (3) is true. Another view is that it is a wholly sensory mental state. On this view premise (3) is false. The view that understanding is a wholly sensory mental state depends on the idea that sensory mental states might have what is called high-level content. Low-level contents represent properties such as shapes, colors, sounds, smells, etc. High-level contents represent properties such as meanings, natural kinds, artifactual kinds, and causal relations. Someone who thinks that understanding is a wholly sensory state, then, will think that it is a wholly sensory state with high-level content attributing

semantic properties to some perceived interpretable item such as an inscription or an utterance.<sup>11</sup>

Two clarifications about this view are in order. First, the view is not that understanding is partly sensory and partly cognitive: it is not that there is a sensory part representing shapes or sounds and a cognitive part representing semantic properties. There is no part of the understanding that is free from awareness of or seeming awareness of environmental witnesses to the instantiation of the semantic properties it represents. Second, the view does not imply that when you understand something you are or seem to be aware of spooky entities—meanings floating around in your spatiotemporal vicinity. The environmental witnesses to the instantiation of semantic properties might just be ordinary low-level audible and visible features of speech and writing. If understanding is a wholly sensory state it does not follow that meanings are objects of auditory or visual awareness. All that follows is that states of understanding represent semantic properties in ways that depend on awareness or seeming awareness of indicators—which might be looks and sounds—of their instantiation.

It is not clear to me which view—the partly cognitive view or the wholly sensory view—of understanding is correct. It would be rash to make an assessment without taking into account empirical work on semantic perception.

Finally let us consider the conclusion of the argument (6). This says: there are some phenomenal states such that cognitive states and not sensory states put one in them. But Irreducibility says something else: some cognitive states put one in

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<sup>11</sup> For further discussion of this issue see (Siegel 2006, 2010) and the papers in (Hawley and MacPherson 2011).

phenomenal states for which no wholly sensory states suffice. There is a gap between the two claims. To see it, we need to take into account the fact that many states are partly cognitive and partly sensory. The state of understanding the news, for example, includes hearing the news. So the significance of (6) is: there are some phenomenal states such that partly cognitive states and not wholly sensory states put one in them. Suppose this is true: there is some case in which a partly cognitive state but not a wholly sensory state puts you in some phenomenal state. It does not follow that there are no wholly sensory states that could have put you in the same phenomenal state. Maybe a partly cognitive state puts you in some phenomenal state, but maybe the phenomenal state it puts you in is no different in kind from the sort of phenomenal state a wholly sensory state might have put you in. Even if that wholly sensory state does not occur on the occasion in question, it still might be a sufficient condition when it does occur for the relevant phenomenal state.

Given these three difficulties proponents of cognitive phenomenology should look for more solid ground for supporting their view than is provided by pure phenomenal contrast arguments.

### 3. Hypothetical Phenomenal Contrast Arguments

A natural way to address the worries about pure phenomenal contrast arguments is to construct a phenomenal contrast argument on the basis of a pair of cases in which it is guaranteed that there is no change in sensory state whatsoever.

Such pairs of cases do not actually occur. But perhaps they could. Hence the name “hypothetical phenomenal contrast argument.”

In recent work Uriah Kriegel has developed an argument that can be construed as a hypothetical phenomenal contrast argument.<sup>12</sup> Kriegel argues for a thesis stronger than Irreducibility. He argues for the thesis I called Independence, which says: some cognitive states put one in phenomenal states that are independent of sensory states. Since Independence implies Irreducibility, any argument that establishes Independence establishes Irreducibility.

Acceptance of Independence is equivalent to belief in purely cognitive phenomenal states. These are phenomenal states for which wholly cognitive states suffice. Kriegel argues for Independence by getting us to imagine a person—Zoe—whose total phenomenal state is supposed to include cognitive phenomenal states but not include any sensory phenomenal states. It is made up of purely cognitive phenomenal states. Kriegel brings Zoe to imaginative life in three stages.

The first stage is to imagine some “partial zombies.” Kriegel starts with a visual zombie: “imagine a person whose visual cortex is so dysfunctional that it produces no visual states. This person is congenitally blind, but—let us suppose—she is also more than that: she is incapable not only of *vision* but also of *visualization*. She is, in Horgan’s phrase, a *partial zombie*—specifically, a *visual zombie*.”<sup>13</sup> It is a short step to imagining a complete sensory zombie, where “sensory” here means pertaining to the five senses. So this person lacks visual, auditory, tactile, gustatory, and olfactory phenomenology. Next imagine an algedonic zombie—someone who

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<sup>12</sup> The argument is in (Kriegel 2015).

<sup>13</sup> (Kriegel 2015).

cannot feel pleasure or pain. Finally imagine an emotional zombie. Each of these partial zombies seems individually imaginable.

The second stage in Kriegel's portrait of Zoe is to put all the partial zombies together: "perform another act of imaginative synthesis and envisage a person lacking all of these phenomenologies [sensory, algedonic, emotional] at once."<sup>14</sup> The idea is that just as you might imagine a sensory zombie by synthesizing visual, auditory, tactile, gustatory, and olfactory zombies, so you might imagine a sensory-algedonic-emotional zombie by synthesizing a sensory zombie, an algedonic zombie, and an emotional zombie.

The third and final stage is to make a stipulation about the person imagined in the second stage: "she happens to be a mathematical genius, and spends her days effectively (re)developing elementary geometry and arithmetic. In her darkened world of sensory, algedonic, and emotional emptiness, she avoids boredom by formulating mathematical propositions, thinking informally about their plausibility, and then trying to prove them from axioms he has provisionally set."<sup>15</sup>

In order to support Independence Kriegel needs to make a further claim about the results of our imaginative endeavors, namely that Zoe has phenomenal states. He does so by arguing that there is a phenomenal contrast. In particular, he considers cases in which Zoe suddenly realizes how a proof ought to go. For example, suppose Zoe conjectures that there are an infinite number of prime numbers. She knows that if there is only a finite number of prime numbers then there is a list of them from first to last  $p_1, p_2, p_3, \dots p_n$ . But how can she use this fact

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<sup>14</sup> (Kriegel 2015).

<sup>15</sup> (Kriegel 2015).

in a proof? ... Suddenly she sees how: let  $P = p_1 p_2 p_3 \dots p_n + 1$ .  $P$  is prime or not. If  $P$  is prime, then  $P$  is a prime not on the list. If  $P$  is not prime, then  $P$  is divisible by some other prime not on the list since division by any those leaves a remainder of 1. So there must be an infinite number of prime numbers.

According to Kriegel there is a phenomenal contrast between the case in which Zoe fails to have the sudden realization and the case in which Zoe succeeds in having the sudden realization. One significant twist in Kriegel's discussion is that he does not just assume that the contrast associated with Zoe's realization is phenomenal. He gives an argument for this claim. I return to the argument below. If Kriegel's claim that there is a phenomenal contrast is true, then Zoe's total phenomenal state at the time of the realization is an example of a total phenomenal state that includes cognitive phenomenal states but does not include any sensory phenomenal states. And so there are purely cognitive phenomenal states—those that make up Zoe's total phenomenal state at the time of the realization—and Independence and Irreducibility are both true.

One weakness in Kriegel's argument is that an opponent of cognitive phenomenology might concede that Zoe is imaginable in some sense, but not the right sense for establishing her possibility. Kriegel says he can conceive of Zoe, and so a situation in which there are total phenomenal states that include cognitive phenomenal states but not sensory phenomenal states. Adam Pautz demurs. Here is what he writes about hypothetical cases of the sort Kriegel describes:

...we *cannot* positively imagine such a case. At least *I* cannot. Just try. If [there is a possible case of cognitive phenomenal states without sensory phenomenal states], then in such a case we have a rich phenomenal life that *overlaps* with our actual phenomenal life, only it is totally non-sensory. But what would it be like? Can you imagine this overlapping phenomenology? If you try to imagine what it would be like, you might imagine seeing all black, having an experience of inner speech (“nothing much is happening”), and so on. But then you will not be imagining a case in which you have cognitive phenomenal properties but *no* sensory properties.<sup>16</sup>

This passage occurs in the context of an argument against Irreducibility, but I do not have space to discuss Pautz’ argument in detail here.<sup>17</sup> For present purposes the key point is that Pautz denies being about to “positively imagine” precisely what Kriegel claims to be conceivable.

One explanation of their different claims is that there is a relevant gap between conceiving and positively imagining. The background here is work on modal epistemology, especially that of Yablo and Chalmers. Chalmers distinguishes between positive and negative conceivability:

The central sort of negative conceivability holds that S is negatively conceivable when S is not ruled out a priori, or when there is no (apparent) contradiction in S.

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<sup>16</sup> (Pautz 2013), pg. 219.

<sup>17</sup> I do so in (Author XXXX).

Positive notions of conceivability require that one can form some sort of positive conception of a situation in which S is the case. One can place the varieties of positive conceivability under the broad rubric of imagination: to positively conceive of a situation is to imagine (in some sense) a specific configuration of objects and properties. It is common to imagine situations in considerable detail, and this imagination is often accompanied by interpretation and reasoning. When one imagines a situation and reasons about it, the object of one's imagination is often revealed as a situation in which S is the case, for some S. When this is so, we can say that the imagined situation *verifies* S, and that one has *imagined that S*.<sup>18</sup>

Suppose all concede that Zoe is negatively conceivable. Is there reason to think that she eludes positive conceivability, or imaginability? Kriegel seems to think not. He says of Zoe that, "it seems to me perfectly possible to imagine such an inner life, even to imagine it from the first-person perspective—to imagine, that is, that it is my own inner life."<sup>19</sup> This last bit is important. According to Kriegel it is not as if we just imagine some person in the room with us and stipulate various truths about her inner life. Rather, we enter into her inner life and positively flesh it out for ourselves in our imagination, just as one might redeploy an imaginative capacity acquired by feeling an itch on one's right elbow in imagining what it is like to feel an itch on one's left elbow.

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<sup>18</sup> (Chalmers 2002), pgs 149 – 150. See also (Yablo 1993).

<sup>19</sup> (Kriegel 2015).



It is important for Kriegel's project that positive imagination is not stipulated to be imagination grounded in sensory imagery. Chalmers explicitly does not. However, in motivating the claim that total phenomenal states like the ones Zoe is supposed to enjoy are not positively imaginable, Pautz only considers attempts that do involve sensory imagery and then notes that they fall short. One might add a restriction to Chalmers' characterization of positive imagining, one that requires positive imagination to be grounded in sensory imagery. But this seems like an illegitimate move in the present context, since arguably imagining purely cognitive phenomenal states—especially from the inside—will not involve forming sensory imagery of them.

Pautz might concede that Zoe is indeed positively imaginable, but deny that what one positively imagines what one positively imagines her is a person who has phenomenal states. Recall that Kriegel presented Zoe to us in three stages: we consider various partial zombies, we synthesize a sensory-algedonic-emotional zombie from them, and then we stipulate that this person spends her time doing math. Pautz can accept all that. But then there is the further claim that the person imagined in this way has phenomenal states. This is an additional claim about the situation, not directly built into the three stages that help us to imagine the situation. In Chalmers' terms, Kriegel's claim is that the situation he has helped us to imagine in three stages is one that *verifies* the claim that the person in it has phenomenal states. This claim about what the imagined situation verifies is additional and Pautz might very well deny it.

Kriegel's claim that Zoe has phenomenal states depends on recognizing a phenomenal contrast between the case in which she fails to suddenly realize a mathematical truth and the case in which she succeeds in suddenly realizing a mathematical truth. The claim that there is such a contrast, however, is not clearly compulsory. I notice phenomenal contrasts of this sort in my own life. But I am not a sensory-algedonic-emotional zombie. Pautz might press the worry that reasoning from the existence of a phenomenal contrast in actual cases to the existence of a phenomenal contrast in hypothetical cases of sensory-algedonic-emotional zombies is illegitimate.

This is not how Kriegel reasons, however. As mentioned above he gives an argument that the contrast associated with Zoe's realization is phenomenal.<sup>20</sup> The argument has two key premises. First, a mental state is phenomenal if it gives a rationally warranted appearance of an explanatory gap with physical states.<sup>21</sup> Second, Zoe's realization gives a rationally warranted appearance of an explanatory gap with physical states: "It is entirely natural to be deeply puzzled about how this episode could just be nothing but the vibrations of so many neurons inside the darkness of the skull."<sup>22</sup> I doubt that these considerations give us *independent* reason to believe the contrast associated with Zoe's realization is phenomenal. Suppose Kriegel's first premise is true. It does not follow that we can gain independent reason to think that a state is phenomenal by gaining reason to think it

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<sup>20</sup> I thank an anonymous reviewer for reminding me and highlighting the significance of this part of Kriegel's discussion.

<sup>21</sup> Section 3 of (Kriegel 2015) elaborates and defends this premise. My formulation does not exactly match Kriegel's, but the basic idea is the same and differences in detail will not matter here.

<sup>22</sup> (Kriegel 2015).

gives an appearance of an explanatory gap. In fact, the opposite seems to be the case: if a state gives an appearance of an explanatory gap it is typically because I can point to its phenomenal features and wonder to myself how anything like that could just be nothing but the vibrations of so many neurons. So there is a lacuna in Kriegel's reasoning: even if giving the appearance of an explanatory gap is a sufficient condition for being a phenomenal state, it does not follow that we can detect its presence independently of a prior detection of phenomenology. This worry is particularly pressing when one takes into account a complication Kriegel himself raises: there are lots of explanatory gaps and many of them have nothing to do with phenomenology. I myself find it difficult to see how intentional states, regardless of whatever phenomenal features they might have, could just be nothing but the vibrations of so many neurons. So not only must we have reason to think the contrast associated with Zoe's realization gives an appearance of an explanatory gap, but we must have reason to think it is the right sort of explanatory gap. It seems to me that if we have such a reason, then it is just because we already have reason to think the contrast associated with Zoe's realization is phenomenal.

At this point it is not clear how to adjudicate the dispute. Suppose that in general if you set out to imagine an F you can tell whether you succeed. It doesn't follow that in general if you set out to imagine an F you can tell whether what you have imagined is also a G. Figuring out whether what you have imagined is also a G might require more resources than figuring out whether you have succeeded in imagining an F. I'm inclined to think that we are in this sort of situation. One might be confident that one has succeeded in imagining Zoe according to Kriegel's

specifications. But one might doubt whether what one has imagined is someone with phenomenal states. Suppose Kriegel adds to his specification that Zoe must have phenomenal states. That is, suppose he does not argue for this using a phenomenal contrast, but builds it into the rules for counting as imagining Zoe. Then one might—with Pautz—lose one’s confidence that one can succeed in imagining Zoe according to the new specifications. For the specifications would be tantamount to the request to imagine a total phenomenal state that includes cognitive phenomenal states but does not include any sensory phenomenal states. This is precisely what Pautz deny being able to do.

#### 4. Glossed Phenomenal Contrast Arguments

In this section I will try to improve on pure phenomenal contrast arguments in a way that does not run into the problems that beset Kriegel’s attempt. The phenomenal contrast argument that I will develop in this section is based on the example of “seeing”—or intuiting—a mathematical truth from the introduction. Here are the two cases:

Case 1: You entertain the proposition that if  $a < 1$ , then  $2 - 2a > 0$  and do not “see” that it is true. In particular you do not “see” how  $a$ ’s being less than 1 makes  $2a$  smaller than 2 and so  $2 - 2a$  greater than 0

Case 2: You entertain the proposition that if  $a < 1$ , then  $2 - 2a > 0$  and do “see” that it is true. In particular you do “see” how  $a$ ’s being less than 1 makes  $2a$  smaller than 2 and so  $2 - 2a$  greater than 0.

Here is the phenomenal contrast argument:

- (1) Case 1 and Case 2 contain different phenomenal states.
- (2) The difference consists, at least in part, in this: in Case 2 but not in Case 1 you are in a phenomenal state P that makes you seem to be aware of an abstract state of affairs.
- (3) No possible combination of wholly sensory states puts one in P.
- (4) Some cognitive state—e.g. the state of intuiting that occurs in Case 2—puts one in P.
- (5) Some cognitive states put one in a phenomenal state for which no wholly sensory states suffice—i.e. Irreducibility is true.

The argument is valid: (1) through (4) do logically imply (5). So the only question is whether all the premises are true. I will say something in support of each.

Premise (1) should be evident from one’s own experience. There just is some phenomenal difference between “seeing” and not “seeing” a simple mathematical truth such as that if  $a < 1$ , then  $2 - 2a > 0$ .

Premise (2) is an added gloss on the nature of that phenomenal difference. This is what makes the argument a glossed phenomenal contrast argument. Both

pure and hypothetical phenomenal contrast arguments do not depend on premises describing the phenomenal differences between contrasting cases. Glossed phenomenal contrast arguments do. This buys argumentative power at the cost of dialectical leverage. Whether the benefits outweigh the costs depends on how defensible the gloss is.

Let us distinguish three ways of defending the gloss in premise (2).

First, one might argue that it is immediately justified by introspection.

Introspection is limited and fallible, but it is clear that at least *some* descriptions of phenomenal states are immediately justified by introspection.<sup>23</sup> Suppose you have a sharp headache. Suppose you make the following claims about it: “My headache is sharp,” “My headache is not dull,” “My headache does not feel like an itch on my elbow.” How might you defend these claims? It seems perfectly reasonable to say in their defense that they are immediately justified by introspection. Such justification need not be very strong. Suppose you say: “My headache feels sharpest above my right eye, dulls over the bridge of my nose, and doesn’t extend over my left eye.” Maybe this claim is immediately justified by introspection, but if so, it is likely less justified than the claim that your headache does not feel like an itch on your elbow. In my view I have at least some immediate introspective justification for the gloss in premise (2). That said, I do not want to put too much weight on it.

Second, one might argue that the gloss best explains similarities between the phenomenal state it describes and other phenomenal states. Consider the following two cases:

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<sup>23</sup> (Siewert 2012) is an illuminating discussion of this phenomenon.

Case 3: You entertain the proposition that there is mail in your mailbox but do not see that it is true. In particular, you do not look in your mailbox and see the mail sitting there.

Case 4: You entertain the proposition that there is mail in your mailbox and do see that it is true. In particular, you do look in your mailbox and see the mail sitting there.

Case 3 and Case 4 contain different phenomenal states. Many philosophers would agree that the difference consists, at least in part, in this: in Case 4 but not in Case 3 you are in a phenomenal state  $P^*$  that makes you seem to be aware—in particular visually aware—of a concrete state of affairs—in particular the state of your mail sitting in your mailbox. I think that phenomenal state  $P$  in Case 2 and phenomenal state  $P^*$  in case 4 are similar in at least some respects. Further, I think that the gloss in (2) best captures these respects. For note that the similarity is not with respect to their content: mail and numbers are rather different. The similarity is with respect to their structure: both make you seem to be aware of a state of affairs that bears on the truth of a proposition you consider. Since in Case 2 the proposition is about abstract matters, the state of affairs you seem to be aware of in  $P$  is an abstract one.

One might worry that some other gloss better explains the similarities. And this brings us to the third way of supporting the gloss in premise (2): one might build up a case for it by arguing that it does better than various natural rivals.

Let us consider a few. I will divide them into two classes. The first class consists of rival glosses that do not involve apparent grasp of a truth. Examples include: P consists in a relief of general tension, P consists in a general feeling of getting it; P consists a feeling of self-satisfaction; etc. The second class consists of glosses that replace apparent grasp of a truth via awareness with some other way of apparently grasping a truth. Examples include: P makes the proposition that if  $a < 1$ , then  $2 - 2a > 0$  seem true; P casts the proposition that if  $a < 1$ , then  $2 - 2a > 0$  in some favorable light; etc.

Rival glosses in the first class are open to the general worry that they fail to explain the similarities between P—the phenomenal state in Case 2—and P\*—the phenomenal state in Case 4. Individual glosses in this class can be challenged by considering a case where a phenomenal state for which the rival gloss seems adequate occurs and contrasting it with P. Consider relief of general tension. Even if P does include a relief of general tension, that is not all it consists in. Suppose you are rather tense while considering our example proposition. You don't "see" that it is true. But a pill that you took earlier kicks in and relieves your general tension. Now you feel the relief of general tension but still don't "see" that the proposition is true. In this case you are not in the same phenomenal state you are in when P occurs. Consider a general feeling of getting it. Even if P does include a general feeling of getting it, that is not all it consists in. Suppose someone tells you a joke and at first you don't get it. Then you do. This gives you a general feeling of getting it, but it doesn't make you "see" that if  $a < 1$ , then  $2 - 2a > 0$ . In this case you are not in the



same phenomenal state you are in when P occurs. Making the joke a mathematical joke does not help. Here is an example:

Three statisticians go out hunting together. After a while they spot a solitary rabbit. The first statistician takes aim and overshoots. The second aims and undershoots. The third shouts out "We got him!"<sup>24</sup>

Getting this joke puts you in a phenomenal state, but it is not the same phenomenal state you are in when P occurs. One might reply on behalf of this rival gloss that P consists of a somewhat more specific feeling of getting it, one that differentiates P from states that have nothing to do with the proposition that if  $a < 1$ , then  $2 - 2a > 0$ . For example maybe P consists of a feeling of getting it directed at an inner verbalization of "if  $a < 1$ , then  $2 - 2a > 0$ ." Perhaps this does better. But it still seems to me to fall short of making clear the similarities between P and P\*. Consider, for example, a feeling of getting it directed at an inner verbalization of "there is mail in my mailbox." That does not capture what it is like to see that there is mail in your mailbox.

Rival glosses in the second class are more plausible. If there is any gloss that might fit P better than the gloss in premise (2) it is that P just implies that the proposition that if  $a < 1$ , then  $2 - 2a > 0$  seems true. It could be that even if we replace the gloss in (2) with this gloss premise (3) will remain true. In that case the glossed phenomenal contrast will remain sound. My own case for (3), however, will

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<sup>24</sup> From <http://www.businessinsider.com/13-math-jokes-that-every-mathematician-finds-absolutely-hilarious-2013-5>

exploit special features of seeming awareness. So I do want to insist that P is special in that it implies seeming awareness of an abstract state of affairs.

Motivation for this derives from consideration of another mathematical claim:

Every even number greater than 2 is the sum of two primes.

This is Goldbach's Conjecture. It remains unproved. It is difficult to shake the feeling that it is true, however. This is especially so if you go through a bunch of examples: you try  $4 = 2 + 2$ ,  $6 = 3 + 3$ ,  $8 = 3 + 5$ ,  $10 = 5 + 5$ ,  $12 = 5 + 7$ , etc. After a while the proposition just seems true. Even so, I maintain: you never get that sense of being aware of the abstract state of affairs that makes it true. No matter how intense the seeming to be true, it is not grounded in any apparent awareness of how the structure of the evens and the structure of the primes link up so as to make the proposition true. Contrast the proposition that if  $a < 1$ , then  $2 - 2a > 0$ . Here you do get a sense of being aware of the ground of the proposition's truth. The relevant structure seems present to mind in a way that it isn't for Goldbach's Conjecture.

The gloss according to which P just implies that the proposition that if  $a < 1$ , then  $2 - 2a > 0$  seems true also fails to explain the similarity between P in Case 2—when you have the intuition—and P\* in Case 4—when you see the mail. Suppose while considering the proposition that there is mail in your mailbox you come to have a premonition that it is true. Suppose this premonition is very intense. This is more like the case of Goldbach's Conjecture. But it is not like the case of "seeing" that

if  $a < 1$ , then  $2 - 2a > 0$ . In that case you do not have an experience like an intense premonition. Your experience is more like seeing the mail in the mailbox. One final note about this, however, is that my claim here is metaphysically non-committal: for all I have said there might be no mathematical states of affairs. My claim is about what your experience is feels like, not about its veridicality. Even nominalists about mathematics tend to admit that Platonism captures the appearances.

Premise (3) depends on the nature of wholly sensory states. Wholly sensory states include states of awareness or states akin to awareness directed at one's spatiotemporal vicinity. If my gloss on the phenomenal state P is correct, however, then it implies seeming awareness of an abstract state of affairs—one that is non-spatiotemporal. One might press a bold view of high-level perception according to which wholly sensory states have representational contents that are about abstract states of affairs. I think this is implausible, but I can concede it for the sake of argument here. What I deny is that wholly sensory states might make one or seem to make one aware of abstract states of affairs. Just representing a state of affairs is one thing. Seeming to stand in an awareness relation to a state of affairs is something over and above that: in the case of seeming awareness the state of affairs is felt to be there before one's mind and a candidate for *de re* thought. What I'm denying is that a wholly sensory state can give you this sense with respect to abstract states of affairs.<sup>25</sup>

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<sup>25</sup> This claim is compatible with views according to which (a) we can hear what someone is saying, and (b) the contents of speech are abstract objects. Hearing so and so say that p is not the same as standing in an auditory awareness relation to the content that p. Elaborating on this point would carry us too far off course. See (Author XXXX) for further discussion.

Premise (4) is motivated by the phenomenal contrast case and the nature of cognitive states. The phenomenal contrast case shows that some state or other does put one in the phenomenal state P. And there is nothing in the nature of cognitive states that rules out the possibility of a cognitive state putting one in P. These two observations together remove any obstacle to accepting the prima facie plausible view that one's cognitive state of intuiting that if  $a < 1$ , then  $2 - 2a > 0$  puts one in P.

So these are my reasons for accepting the premises in the argument. If they are true, then so is the conclusion, i.e. so is Irreducibility.

## 5. Conclusion

Philosophical topics come into focus while still embedded in a network of ongoing controversies. And progress typically depends on drawing those distinctions that enable a clearer view of exactly what is at issue. Cognitive phenomenology is no exception. The recent literature seems to me to be converging on the idea that the central issue with respect to cognitive phenomenology is Irreducibility—the thesis that some cognitive states put one in phenomenal states for which no wholly sensory states suffice.

In this paper I have reviewed one of the main strategies for arguing in favor of Irreducibility. The strategy is to give a phenomenal contrast argument. There are at least three varieties. Pure phenomenal contrast arguments just depend on observing phenomenal differences. Hypothetical phenomenal contrast arguments depend on postulating phenomenal differences. Glossed phenomenal contrast

arguments commit to minimal descriptions of observed phenomenal differences. I have given reasons to be dissatisfied with the first two sorts of argument, and I have developed a version of the third sort of argument that I find convincing.

## Bibliography

Bayne, T., and M. Montague. 2011. *Cognitive Phenomenology*. Oxford University Press, USA.

Carruthers, Peter, and Bénédicte Veillet. 2011. "The Case Against Cognitive Phenomenology." In *Cognitive Phenomenology*, edited by Tim Bayne and Michelle Montague. Oxford University Press.

Chalmers, David J. 2002. "Does Conceivability Entail Possibility?" In *Conceivability and Possibility*, edited by Tamar S. Gendler and John Hawthorne, 145–200. Oxford University Press.

Hawley, Katherine, and Fiona Macpherson. 2011. *The Admissible Contents of Experience*. Wiley-Blackwell.

Horgan, Terry, and George Graham. 2012. "Phenomenal Intentionality and Content Determinacy." In *Prospects for Meaning*, edited by Richard Schantz. De Gruyter.

Koksvik, Ole. 2011. *Intuition*.

Kriegel, Uriah. Forthcoming. *The Varieties of Consciousness*.

- Levine, Joseph. 2011. "On the Phenomenology of Thought." In *Cognitive Phenomenology*, edited by Tim Bayne and Michelle Montague. Oxford University Press.
- Pautz, Adam. 2013. "Is Phenomenology the Ground of Intentionality?" In *Phenomenal Intentionality*, edited by Uriah Kriegel. Oxford.
- Pitt, David. 2004. "The Phenomenology of Cognition, or, What Is It Like to Think That \_P\_?" *Philosophy and Phenomenological Research* 69 (1): 1–36.
- Prinz, Jesse. 2011. "The Sensory Basis of Cognitive Phenomenology." In *Cognitive Phenomenology*, edited by Tim Bayne and Michelle Montague. OUP.
- Siegel, Susanna. 2006. "Which Properties Are Represented in Perception?" In *Perceptual Experience*, edited by Tamar S. Gendler and John Hawthorne. Oxford University Press.
- . 2006. "Subject and Object in the Contents of Visual Experience." *Philosophical Review* 115 (3): 355–88.
- . 2007. "How Can We Discover the Contents of Experience?" *Southern Journal Of Philosophy* 45 (S1): 127–42.
- . 2010. *The Contents of Visual Experience*. Oxford.
- Siewert, Charles. 1998. *The Significance of Consciousness*. Princeton University Press.
- . 2012. "The Phenomenology of Introspection." In *Consciousness and Introspection*, edited by Declan Smithies and Daniel Stoljar. Oxford University Press.
- Smithies, Declan. 2012. "The Nature of Cognitive Phenomenology." *Philosophy Compass*.

Strawson, Galen. 1994. *Mental Reality*. MIT Press.

———. 2011. “Cognitive Phenomenology: Real Life.” In *Cognitive Phenomenology*, edited by Tim Bayne and Michelle Montague. Oxford University Press.

Tye, Michael, and Briggs Wright. 2011. “Is There a Phenomenology of Thought?” In *Cognitive Phenomenology*, edited by Tim Bayne and Michelle Montague. Oxford University Press.

Yablo, Stephen. 1993. “Is Conceivability a Guide to Possibility?” *Philosophy and Phenomenological Research* 53 (1): 1–42.