

Wittgenstein on the Inverted Spectrum

David Stern, Iowa City

1. Introduction

This paper looks at some of the connections between what Wittgenstein had to say about imaginary inverted spectrum scenarios and current discussion of qualia inversion thought experiments. Wittgenstein never uses the terms “quale” or “qualia,” the current term of art for the qualitative aspect of experience, “what it’s like” to have that experience. However, in *Philosophical Investigations* 272, he touches on these concerns when he raises the possibility that different groups of people might have different visual impressions of red:

The essential thing about private experience is really not that each person possesses his own specimen, but that nobody knows whether other people also have *this* or something else. The assumption would thus be possible – though unverifiable – that one section of mankind had one visual impression of red and another section another.

Some readers have taken Wittgenstein to be affirming that the “assumption” in question is a possible though unverifiable hypothesis. However, it is clear from the overall context that this passage is only setting out one consequence of the view that experience is private, not endorsing it. Indeed, Wittgenstein is neither affirming nor denying the “assumption” that different sections of mankind have different visual impressions of red. As Philippa Foot puts it in a paper written in 1982, “according to him we merely think we understand the words we use when we try to formulate the hypothesis” (Foot 1982, 1). In a similar vein, Sydney Shoemaker, in his paper on “The Inverted Spectrum” observes that Wittgenstein “thinks that this ‘assumption’ is in fact senseless or conceptually incoherent and takes it to be a *reductio ad absurdum* of the notion of ‘private experience’ he is attacking that it implies that this ‘assumption’ might be true” (Shoemaker 1982, 328). Indeed, as we shall see later, Wittgenstein raises questions

about the coherence of the use of the idea of spectrum inversion in philosophical thought experiments in his writing from the 1930s.

Much recent writing on spectrum inversion, on the other hand, makes use of thought experiments about spectrum inversion in order to argue for the existence of qualia. The current literature is extensive and varied. The PhilPapers website listed 87 papers under the heading of inverted qualia as of September 2009. The topic merits its own lengthy entry in the *Stanford Encyclopedia of Philosophy*. It begins as follows:

Qualia inversion thought experiments are ubiquitous in contemporary philosophy of mind (largely due to the influence of Shoemaker 1982 and Block 1990). The most popular kind is one or another variant of Locke's hypothetical case of spectrum inversion, in which strawberries and ripe tomatoes produce visual experiences of the sort that are actually produced by grass and cucumbers, grass and cucumbers produce experiences of the sort that are actually produced by strawberries and ripe tomatoes, and so on. (Byrne 2008)

The first sentence indirectly indicates a crucial connection between Wittgenstein's writing on spectrum inversion and the current debate: Sydney Shoemaker begins his much discussed article on the topic, cited in that first sentence, with a critical discussion of Wittgenstein's writing on spectrum inversion in the "Notes for Lectures on 'Sense Data' and 'Private Experience'". Consequently, Wittgenstein's views on the topic are frequently referred to in the subsequent literature, even if only in passing. That discussion has recently circled back on the question of what position Wittgenstein might have taken about the subsequent debate. In "Wittgenstein and Qualia," Block (2007) provides a much more detailed defence of the reply to Wittgenstein on the inverted spectrum sketched in Shoemaker's paper. That paper has already inspired a response by Canfield (2009), who argues that Block begs the question under debate by presupposing the very claims about qualia he purports to defend.

2. Shoemaker on Wittgenstein on the Inverted Spectrum

I should make it clear at the outset that I think Foot and Shoemaker are on the right track in taking Wittgenstein to hold that the inverted spectrum "hypothesis" is not a hypothesis at all. Although I cannot pursue the point here, the strategy of attributing a *reductio* argument about private language

to Wittgenstein, along the lines Shoemaker proposes, already concedes too much, in implying that we *do* understand the “assumption” in question (see Stern 2004, ch. 7, and 2007). If, as I believe, the classical philosophical conception of the inverted spectrum is more like a fantasy than a false theory, if we merely think we understand the words we use when we try to formulate it, as Foot puts it, then it is a mistake to treat it as something we do grasp well enough to reason to a contradiction.

It is much more difficult to say precisely *why* Wittgenstein takes this position, and what it amounts to. It is, after all, very easy to think that the hypothesis of the inverted spectrum is intelligible, and that it *must* make sense. It is easy to explain to a small child. Indeed, when Ned Block’s seven-year old daughter first heard about it, she replied that it explained why some people don’t have purple as their favorite colour. (Block 2007, 86)

In 1982, Foot wrote that it struck her as very strange that Wittgenstein’s views about the inverted spectrum hypothesis were very rarely discussed: “It must, I think, be assumed by the very many philosophers who talk about the hypothesis of the inverted spectrum as if it were something we all understand that Wittgenstein could easily be shown to be wrong but the odd thing is that they never give the slightest idea of how this is to be done” (Foot 1982, 1-2). As it happens, Shoemaker’s “The Inverted Spectrum,” published that year, radically changed the terms of debate by arguing that Wittgenstein himself provided the raw materials from which such a reply could be constructed. Shoemaker based his argument on a striking passage in Wittgenstein’s “Notes for Lectures on ‘Sense Data’ and ‘Private Experience’”:

Consider this case: someone says “it’s queer/I can’t understand it/, I see everything red blue today and vice versa.” We answer “it must look queer!” He says it does and, e.g., goes on to say how cold the glowing coal looks and how warm the clear (blue) sky. I think we should under these or similar circumstances be inclined to say that he saw red what we saw [blue]. And again we should say that we know that he means by the words ‘blue’ and ‘red’ what we do as he has always used them as we do.”¹

¹ Wittgenstein 1993, 231; quoted by Shoemaker 1982, 327-8 (using Rhees’ 1968 edition), and by Block 2007, 75.

This appears to have been the first discussion of *intrasubjective* spectrum inversion – one that occurs to a single subject. Up to this point, authors had concentrated on *intersubjective* inversion – the Lockean case in which different people have different color sensations of the same thing. The point, presumably, of introducing the case of an isolated instance of intrasubjective inversion is that such a modest change is not only conceivable but also potentially easily verifiable, and so provides a convenient point of departure in considering the more widespread change involved in the traditional intersubjective thought experiments.

Shoemaker argued that “there is a natural line of argument from what Wittgenstein seems to admit – the logical possibility of intrasubjective spectrum inversion – to what he apparently denies the meaningfulness of asserting – namely the possibility that intersubjective spectrum inversion actually exists” (1984, 328.) For if someone, call him Fred, undergoes inversion at time *t*, and others do not, then Fred’s color experience will be different from theirs either before or after *t* (or both). So Fred’s intrasubjective inversion leads to intersubjective inversion; and if one person’s color experience can differ from another’s at one time, why not permanently? “Why then” Shoemaker asks, “is Wittgenstein not committed to the very thing he seems to deny?” (1984, 329-330.)

In other words, there seems to be a slippery slope that leads from the initial story of intrasubjective inversion, the “innocuous” scenario, to use Block’s (2007, 75-76) terminology, and the “dangerous” scenario of widespread intersubjective inversion. Indeed, as Shoemaker noted, Wittgenstein did discuss this very possibility, at least in outline, later on in the same “Notes for lectures”:

We said that there were cases in which we should say that the person sees green what I see red. Now the question suggests itself: if this can be so at all, why should it [not] be always the case? It seems, if once we have admitted that it can happen under peculiar circumstances, that it may always happen. But then it is clear that the very idea of seeing red loses its use if we can never know if the other does not see something utterly different. So what are we to

do: Are we to say that this can only happen in a limited number of cases? This is a very serious situation. –²

Shoemaker does not give much attention to this problem, but he does propose a broadly verificationist reading of why Wittgenstein might have differentiated between the innocuous and the dangerous scenarios – the former is behaviorally detectable, because the subject of the change reports dramatic changes in his experience, while the latter is not detectable in this way. However, there is no good reason to equate Wittgenstein's talk of "use" here with the idea that there must be a procedure that would verify the claim in question.

Shoemaker describes Wittgenstein as though he were attracted to rejecting the very idea of intersubjective inversion, or at the very most, that Wittgenstein holds that we could only make sense of it if it happened to a very limited number of people. It is true that some philosophers, notably Frege and Schlick, have maintained a quasi-solipsistic view on which intrasubjective comparison of colour experience is meaningless. On this view, the very idea of someone else's experiencing spectrum inversion is empty, or at best, just a manner of speaking by analogy. Wittgenstein was certainly acquainted with this approach, but it should be clear from his discussion of the original scenario of intra-subjective spectrum inversion in the third person – he asks us to imagine it happening to someone else – that he does not endorse such a position. Nor, I think, should we take his proposal that perhaps we should say that it could only happen in a limited number of cases too seriously. I see no reason why Wittgenstein is committed to ruling out a priori the possibility of widespread spectrum variation, or systematic changes in color perception, due either to genetic variability in the physiology of the eye, or changes in eyesight associated with aging (see Block 2007, section 7, & 1999). However, such hypotheses are at best a diversion from the real issue, which is the proposal that someone with normal eyesight and brain might have different "visual qualia." This proposal is motivated by the idea of private experience, and the conception of the mind as a separate realm.

² Wittgenstein 1993, 285; quoted in part by Shoemaker 1982, 327-8 (using Rhees' 1968 edition), and by Block 2007, 75-76.

3. Block and Canfield on Wittgenstein on the Inverted Spectrum

Shoemaker's discussion is taken up and developed in much greater detail in a recent paper by Block (2007), who repeats the verificationist construal of Wittgenstein's proposal that "the very idea of seeing red loses its use if we can never know if the other does not see something utterly different" (citation above). The equation of "use" and verification leads Block to propose an elaborate science fiction thought experiment, a development of the story about Fred designed to show that there could be inversion in a subject with normal responses to colors, inversion that would therefore be behaviorally un-detectable. We are asked to imagine that you are a normal person who undergoes inversion at age 18, perhaps by "crossing the wires in the visual system." As time goes by, your vision does not change, but you gradually get used to using the standard color vocabulary for stoplights and tomatoes, and even come to think in those terms. Nevertheless, you clearly remember what things looked like before the changeover, and the nature of the change. However, as you get older, amnesia strikes, and by the age of 60, you no longer remember anything that occurred before your 50th birthday: at this point, you are behaviorally indistinguishable from those with normal color vision, yet your vision is inverted – your qualia are quite different from those of a normal perceiver. This is only the briefest summary of a 15-page argument, replete with multiple colored diagrams, and elaborate responses to a number of subtle and complex objections. Still, the overall direction of Block's argument is clear: he aims to show that an inverted spectrum is possible by describing, in great detail, a theoretically possible sequence of events that leads us from the "innocuous" scenario to the "dangerous" one.

Canfield's reply to Block turns on the point that Block and Wittgenstein have very different understandings of just what is going on in the "innocuous" scenario that each begins with (and also of the "dangerous" scenario that Block ends with.) Wittgenstein is concerned to bring out the pre-conceptions that we may bring to such a story – our "picture" as he calls it – of the relation between mind and experience.

For if the red and blue that I see are pictured as mental entities of some sort – things I have or am aware of – then it is easy to think it possible that the mental thing I have when I see red is (qualitatively) the one you have when you

see blue. In short we are inclined to the ‘always’ extension of the innocuous case because we philosophize under the influence of the picture of the inner. For Wittgenstein that extension is something to be examined critically, whereas for Block it serves as the basis for a proof of inverted spectra and qualia. His premisses rest ultimately on intuitions – for example those concerning certain supposed conclusions drawn from the physiology of sight. Wittgenstein on the other hand takes intuition not as something like evidence, but as reporting on what we are strongly inclined to say. (Canfield 2009, 3)

Wittgenstein’s purpose in introducing the “innocuous” story, then, is precisely to illustrate how we can go wrong, how we can move from sense to nonsense without realizing that we are doing so. Canfield sums up the difference between Block and Wittgenstein with a simple diagram, deliberately much cruder than Block’s elaborate schemata. Block conceives of the “innocuous” scenario as involving not just two subjects and their different reports on the colour of the object they look at, but also two different subjective sensations, two “thought bubbles”, one attached to each person’s head.

4. Hacker on Wittgenstein on the Inverted Spectrum

In a manuscript written in 1937, Wittgenstein approaches the hypothesis of the inverted spectrum from a very different perspective. He writes:

Imagine each person had from birth a board with rows of attached color samples. Now, if he learns the names of the colors in the course of his childhood - as the adults point to a thing and say a name of a color - then he writes this name by *one* of the colors on his board. I want to assume that nobody sees which sample he writes the name by. - He is then got to make use of the names of the colors in the most diverse ways and I assume he is a ‘normal person’, nobody ever says he is color blind, does not know the colors, mixes them up etc. etc. Business with these words takes place smoothly. He says, like anyone else, the leaves look green in the summer, and become yellow and red in the autumn - etc., etc. Now, I want to assume, if he has to judge a color, he always looks alternately at the object and at his board - as if comparing the colors - and furthermore: if one tests his color sense by asking: “Which color is called ‘red’?” then he first of all looks at a sample on his board (which we, however, do not see) and then points to a red object for the questioner. Likewise if one asks him: “What is this color called?” (pointing to some such thing) he checks his board first, then says the *correct* name. And now imagine that we somehow found out that he had the word “red” written by a green sample on his

board, by a red one, “blue,” etc.! “So then it would all be a misunderstanding!” – Why? – “Well, he still meant green the whole time, even if he ‘said red!’” – But why do you say that? Is that the criterion, then, for what he “means” by a word? Do you have to take *that* as a criterion for it? *Have* you taken it as the criterion for his meaning in the practical use of language? Why shouldn’t you just as well say: it is completely irrelevant for what he “means”, where he points on his board? Or you could say: “There are two different uses of the expression ‘the color, which he meant’”; but there can be no talk of *misunderstanding*! (MS 119, 87-91; 1937, my translation)

Hacker quite correctly describes this as an “effort to shake the grip of the private object that apparently functions as a private sample for the use of a word” (1990, 55). However, he also calls it a *reductio ad absurdum*, which concedes too much, I believe, to the position Wittgenstein opposes, in implying that it is a position that implies a contradiction. The passage certainly does aim to convince us that the idea of a private inner experience of colour, of qualia that float free of our intersubjective use of words for colour, is absurd. But I see no contradiction here, only an attempt to set out the views of the defender of the hypothesis of the inverted spectrum that make it look manifestly bizarre, a redescription that aims to get the reader to see it as an obsessive tic unconnected with the rest of what we do and say. The story Wittgenstein tells in this passage is very similar to the discussion of the grocer at the end of the opening section of the *Philosophical Investigations*. Asked for five red apples, he consults a colour chart in order to select apples of the right kind before counting them out one by one. The aim of both exercises is to get us to take a postulated process that seems somehow intelligible as long as it goes on in the mental realm, and show us how strange it is by imagining a language game, a practical activity, in which those ghostly processes are transposed into the domain of everyday action (see Stern 2004, 83-86).

5. Conclusion

The moral that I would like to draw from our consideration of these varying responses to Wittgenstein on the inverted spectrum is that we should be very wary of the idea that there is any one such thing as “the inverted spectrum.” Rather, we face a wide variety of different stories about spectrum inversion, each of which must be assessed on its merits. The point of Witt-

Wittgenstein's story about the possibility of someone's waking up and seeing everything red blue and vice versa is to emphasize that we can conceive of spectrum inversion in a quite specific and limited set of circumstances. In such a case, we would have good reason to say the person saw red what we saw blue. He contrasts this with a quite general case of spectrum inversion, the kind usually discussed in the literature up to that point, in which we are supposed to imagine that for all we know other people have always had quite different experiences from myself when looking at red and blue objects. In such a case, we might well ask how we know what those others mean by the words "red" and "blue." Wittgenstein's reasoning is closely analogous to Descartes' discussion of sensory illusion at the beginning of the *Meditations*. That the senses mislead us on occasion gives us good reason to doubt some of our judgments based on the evidence of our senses, but it gives us no reason to doubt all of those judgments, for we have to appeal to some of them in order to have grounds to doubt those that we put into question. Descartes, of course, goes on to consider the possibility that I might be dreaming, or deceived by an evil demon; Shoemaker and Block go on to consider their own elaborate hypotheses about spectrum inversion. But each of these further scenarios imports additional questionable assumptions in the guise of a supposedly plausible story.

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