I have argued that empirical findings about the effect of attention on perception show that both representationism and naïve (or direct) realism are false theories of the phenomenal character of perception (2010, 2015a). Sebastian Watzl makes a case that my argument fits the same schema as the inverted spectrum argument against representationism and that we see both arguments more clearly by considering them together.

His rendition of my argument is this: the representational content of a percept is a matter of its accuracy conditions. Things look different in regard to contrast depending on the degree of attention to the target, so we are faced with the question of whether the accuracy conditions of a perception are such that one degree of attention fits them better than another. For simplicity, we can pretend there are only two degrees of attention, attended and unattended. Both cannot be accurate since they conflict. And if both are inaccurate, that would make all perception erroneous, appropriately generalized. On the supposition that only one is accurate, it would be arbitrary to pick one percept rather than the other as the accurate percept. So, the argument goes, the content of the perception (as spelled out by the accuracy conditions of the perception) does not determine its phenomenal character. I accept the conclusion, but Watzl does not.

The locus of disagreement is the no-error premise that says that it is not the case that both attended and unattended percepts are inaccurate. Watzl proposes to reject that premise, holding that both are inaccurate. I don’t think that any degree of attention systematically engenders misperception, and of course I also reject the claim that every degree of attention systematically engenders misperception. If attention engenders error, one could hold that perception is approximately accurate but that there would always be some level of inaccuracy due to attention. One alternative is that perception is imprecise enough to be veridical despite the effects of attention. I have attempted to explore that issue (Block 2015a). Sascha Fink has criticized my proposals (Fink 2015) and I have replied (Block 2015b).

One thing to be clear about is that the no-error premise in effect narrows the discussion to “realist” versions of representationism (Byrne 2001; Dretske 1995; Tye 2000) in which color experience represents (if slightly inaccurately) actual instantiated
properties. Representationism in the sense that Watzl and I have in mind is that what it is for a percept to have a certain phenomenal character is for it to have a certain representational content. On realist versions of representationism, those representational contents are often at least approximately accurate. That excludes views like that of Chalmers and Pautz in which perceptual experience represents “Edenic” properties that are never instantiated in the actual world, not even approximately (Chalmers 2006; Pautz 2006).

I think Watzl is right that the attention case of the schema is superior to the inverted spectrum case in a number of respects. In the intersubjective version of the inversion scenario, we are to imagine identical twins, one of whom has the wires in his visual system crossed in a way such that if done in adults, creates an inversion of color perception. The twins are functionally isomorphic and use color terms to apply to the same things. The idea is that when the twins grow up they learn normal color terminology, but the experiences that go with specific colors will be inverted. Functionalists can reply that we have no reason to believe that the crossing of wires in the visual system has the same significance in adults as in children raised from scratch with that wiring. The adult whose wires have been crossed testifies that everything looks different from the way it did before the operation, but the twins’ operation happened prior to any memory of color experience. If the wire-crossing has produced different physical realizations of the experience the twins get on seeing a red thing, those can be said to be just different realizations of the same color phenomenology.

The intrasubjective form of the inversion scenario has an advantage over the intersubjective form in that memory can attest to the different experiences of the same external color. But—the other side of the coin—it introduces concerns about whether the operation that crosses wires or the subsequent adaptation to the changed circumstances affects memory (Dennett 1988).

As Watzl notes, these issues do not arise for the attention version of the argument schema since the percepts being compared are percepts of a single person that happen in the same time period rather than percepts of different people or a different stage of the same person. A subject can move attention back and forth and appreciate the phenomenal difference.

Watzl says the inversion argument depends on a move from conceivability to possibility. We already know how to produce the setup for the intrasubjective inversion case. We can make LED screens that invert colors, and they could be put in virtual reality goggles. The move from conceivability to possibility concerns the issue of whether the inversion produced by crossing the wires at one age of the subject persists through a change in the use of color terminology over time.

But we do not need to know what would happen over time in the intrasubjective scenario since there is a version of the thought experiment—the inverted earth scenario—in which no such change is required (Block 1990). You are drugged and kidnapped in
the middle of the night, the wires in your visual system are crossed, and you are moved to Inverted Earth, a place where the colors of everything are the complements of what they are here and where color language is similarly switched. You wake up in the morning unaware that anything has happened and notice no difference even though the sky is yellow, grass is red, and so forth. The controversial premise, one that has been much criticized (Tye 1998), is that eventually—over a period of years—your words and visual representations come to be veridical; for example, to represent the sky as having the color it has (yellow).

As I mentioned, Watzl rejects the no-error premise. He thinks that attending to the patch yields an erroneous percept and not attending to it yields an erroneous percept. Of course, the attended-unattended dichotomy was really a fiction introduced for simplicity, so as he says, all degrees of attention in this case engender error.

How could all degrees of attention engender error? Watzl argues that the function of attention is to make perception usable:

The amount of attention that would yield an accurate representation then would be the one that would help optimize the function of perception. But that function would be optimized, it seems, if usability were no concern but only accuracy was. And this would happen in an idealized scenario in which the subject either did not have the capacity for attention or in which her attention was evenly distributed, thus avoiding any potential distortion of accuracy in the service of usability. Since these conditions are not in place in Carrasco’s experiments, we thus get the result that both E1 and E2 are inaccurate.

But wait—as Watzl mentions, we don’t know whether perception without any attention at all is even possible. And appeal to scenarios in which attention is evenly distributed is undefined since there are three types of attention: spatial, feature-based, and object-based. Is attention supposed to be evenly apportioned to each type? Or only within types? How could there be a principled answer to this question? Even distribution of attention may make sense for spatial attention but not for feature- or object-based attention. What objects or features is the attention supposed to be evenly distributed over? Do distant objects and their features get as much attention as close-up objects? Principled answers would seem to be elusive.

Even if we understand the idea of spatial attention being distributed equally over all areas of space seen, it is not clear what such a distribution would amount to in the case of the other types of attention. And if spatial attention really were distributed over the whole visual field, it is not clear whether there would be sufficient attention devoted to any one point of space to enable perception at all—much less veridical perception. Peter Lennie estimates that perhaps 1 percent of the neurons in the brain can be substantially active at once (Lennie 2003). The point of spatial attention is to concentrate resources on one area of space to avoid the cost of activity across the visual field. It is not known whether if resources were spread evenly, there could be any perception at all. Or are we
to imagine a science fiction scenario in which an impossibly high level of attention is
distributed evenly across the whole visual field? But what level would that be and what
would happen in this impossible situation? The upshot is that the idealization condi-
tion Watzl suggests is not well defined. We have no idea whether in the conditions of
no attention or of evenly distributed attention there would even be perception at all.

On Watzl's view, it would seem that the most perception can hope for is approxi-
mate accuracy. But does the claim that perception is never truly accurate even make
sense? It is only because we have a history of veridical perception, including the history
of perception in our evolutionary past, that our perceptual representations even have
content (Block 2015a; Burge 2010). It is this history of veridical perception that makes
it the case that our percepts have the accuracy conditions that they have.

(Of course, this idea is rejected by the irrealist forms of representationism mentioned
earlier according to which the brain has an intrinsic capacity to represent certain sens-
sible properties. See Pautz’s External Directedness premise in chapter 23.)

A completely different beef with Watzl's suggestion, though, is that it is very unclear
how to generalize it to other cases that raise exactly the same issues about accuracy.
Note that the same issues arise because of the inhomogeneities in the visual field. In
figure 36.1, if you fixate on the cross, the four different patches should look roughly
equal in contrast. (This figure was prepared by Jared Abrams and they look equal in
contrast to him; but everyone's visual system is slightly different.) The patch above the
horizontal meridian has twice the contrast of the one below the meridian—sensitivity
to contrast is greater below the meridian. The one above the meridian is 30 percent, the
one below is 15 percent, and the ones on the side are 10 percent. It takes a 30 percent
patch in the north to match a 10 percent patch in the east. More generally, vision in
the lower visual field has 65 percent higher contrast sensitivity than vision in the upper
visual field. And contrast sensitivity is better along the horizontal meridian than along
the vertical meridian for points of equal eccentricity. Asymmetries of this sort have
been shown not only for contrast but for many other features: motion, gap size, spatial
frequency (roughly, density of light and dark areas) orientation, and letter recognition.

These asymmetries can be used to mount much the same argument as with atten-
tion (Block 2015a). Which is more accurate, the perception of a grid in the upper visual
field, on the horizontal meridian, or in the lower visual field? Perhaps the most accu-
rate perception of a patch occurs when one is fixating on the patch itself? But then the
question arises as to whether fixating on something distorts for informational purposes,
as Watzl alleges for attention. If so, where in the visual field is perception accurate?

Watzl says,

We should thus reject answering Block's question concerning which amount of attentional
resources delivers accurate representations of contrast. There is no such amount and no thresh-
old. The scenario that yields accuracy instead would be a scenario in which optimizing the
function of attention played no role.
What would be the analogue of this proposal for the asymmetries in the visual field? It is unclear how Watzl’s proposal would generalize to this case since there is no analogue of attention to be evenly spread. We can speculate as to the function of the different sensitivities in different parts of the visual field. Carrasco, Talgar, and Cameron (2001) suggest there is more information on the horizontal meridian than the vertical meridian, so evolution would have favored distributing processing resources more along the horizontal meridian. So I guess the analogue of Watzl’s proposal for this case would be a hypothetical perceiver that had no such asymmetries in the visual field. But what level of contrast sensitivity is supposed to be distributed over the whole visual field? That of north? East? The fixation point? The quandary involved in answering this question simply duplicates the original quandary, so no advance has been made.

Watzl argues that perception is generally erroneous but that the error is small enough not to be problematic. As I said, there is a case (2015a) that this cannot be because we need a history of veridical representation for there to be content at all. But I wonder if the proposal makes sense. A perception of object o as F is veridical just in case object

![Figure 36.1](image)

This figure shows asymmetries in the visual field. If you fixate on the cross, the different patches should look roughly equal in contrast—though everyone’s visual field has somewhat different asymmetries. It takes a 30 percent contrast in the north to match a 10 percent contrast in the east at equal distance from the cross. The superiority of the horizontal meridian to the vertical meridian is known to be due to anatomical asymmetries in the visual system (Abrams, Nizam, and Carrasco 2012). I am grateful to Jared Abrams for this figure.
o is F. In the case of contrast, a perception of the 30 percent contrast patch in the north of figure 36.1 would be veridical if and only if perception attributed 30 percent contrast. But how do we know what would make a perception attribute 30 percent contrast? Where do I fixate to get the perception that attributes 30 percent contrast? All the issues just mentioned arise in regard to this question. A claim that perception is slightly erroneous requires some way of specifying what veridical perception would be. But to get such a specification, we would need an answer to the question of whether higher contrast sensitivity involved in attention and in placement in the visual field works in the manner of a magnifying glass, distorting in the cause of gaining more information.

I believe that the upshot is that representational content of an experience does not determine its phenomenal character. But the chief alternative is that perception is imprecise enough to be veridical despite the effects of attention. I have argued that that alternative runs into the problem that perception would have to be more imprecise than it actually is (Block 2015a).

References


