

“Why Block can’t stand the HOT”

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**ABSTRACT**

Ned Block has recently pressed a new criticism of the higher-order thought (HOT) theory of consciousness. HOT proponents have responded in turn. The exchange affords a chance to find some clarity concerning the essential commitments of HOT, as well as a chance to find clarity on the issues that divide Block and HOT proponents. In this paper I discuss the recent exchange, and I draw some lessons. First, I side with HOT proponents in arguing that new criticism presents no new problem for HOT. Second, I argue that the issues separating Block and HOT proponents suggest that two separate debates are being conflated, and I suggest that keeping them distinct will yield progress for consciousness studies.

**1. Introduction: HOT and its critics**

Some of our mental states are conscious, some are not. What feature of mental or brain functioning explains the difference? Some theorists begin by noting that many share the following intuition about conscious mental states – to possess a conscious state is to be in some way aware of the state. Or, as David Rosenthal has put it, ‘a state’s being conscious consists in one’s being conscious of it’ (2004, p. 17). One prominent explanation of state consciousness, the higher-order thought theory (henceforth, HOT), explains state consciousness by explaining awareness. According to HOT, an agent is conscious of a given state when an assertoric, non-

inferential, higher-order thought of hers is directed on the state in a certain way – when the intentional content of the HOT contains the assertion that one is in that state.

As HOT proponents admit, the theory allows for cases of misrepresentation. Many have seized on this, pressing a version of the following objection (e.g., Balog 2000; Kriegel 2003; Neander 1998; Levine 2001; Mandik 2009). Suppose that I have a first-order sensory state which is caused by my separated shoulder – I am in a first-order state of pain. What happens if I possess a HOT which misrepresents this state, asserting instead that my shoulder tickles? It seems odd to say that I am in a ticklish conscious state – after all, the relevant (first-order) state is a state of pain. Many have argued that this type of situation spells trouble for HOT.

Recently, Ned Block – who has been a forceful critic of higher-order views (see, e.g., Block 2007, 2009) – has used the possibility of misrepresentation to offer what he takes to be a new and powerful argument against HOT (Block 2011a). David Rosenthal (2011) and Josh Weisberg (2011a) have separately replied, and Block (2011b) has replied in turn. The exchange affords a chance to find some clarity concerning the essential commitments of HOT, as well as a chance to find clarity on the issues that divide Block and HOT proponents. In this paper I discuss the recent exchange, and I draw some lessons. First, I offer reasons to agree with Rosenthal and Weisberg that Block’s new argument presents no new problem for HOT. Second, I argue that the issues separating Block and HOT proponents suggest that two separate debates are being conflated, and I suggest that keeping them distinct will yield progress for consciousness studies.

## **2. Block’s criticism**

Block’s new criticism of HOT involves a distinction between what Block calls *modest* and *ambitious* versions of HOT (2011a). Modest theorists offer HOT merely to explain higher-

order consciousness – consciousness ‘in one sense of the term’ (2011a, p. 421). Ambitious theorists have metaphysical aspirations. They seek to explain why some states have the unique property of ‘what-it’s-like-ness.’ Block aims his argument at ambitious theorists. We can bring it out by considering the following characterization of HOT (which I take to be faithful to Block’s characterization of the view):

HOT. An episode is conscious at  $t$  iff it is the object of an assertoric higher order thought at  $t$ , arrived at non-inferentially.

On the above characterization, we get the following sufficient condition and the following necessary condition for a state’s being conscious.

Sufficient. A HOT at  $t$  is sufficient for a conscious episode at  $t$ .

Necessary. A conscious episode at  $t$  is the object of a simultaneous HOT.

Now consider a case of radical misrepresentation, in which there is no first-order state – a case in which the HOT is empty. The sufficient condition tells us that there is a conscious episode. But the necessary condition seemingly tells us that there is no conscious episode – for the target of the HOT does not exist. According to Block, ‘the sufficient condition and the necessary condition are incompatible in a situation in which there is only one non-self-referential higher order representation’ (2011a, p. 425). Since such cases seem possible, the incompatibility represents a problem for HOT proponents.

Block notes that HOT proponents have embraced the possibility of empty HOTs, arguing that in such cases the phenomenology of the state will be the same even though the target of the HOT is non-existent (e.g., Rosenthal 2005, Weisberg 2011b). But Block castigates this embrace, arguing that what-it's-like-ness could not matter in the same way to an agent if the what-it's-like-ness is instantiated in a non-existent state. According to Block, 'if what-it-is-like-ness is supposed to *matter* in the same way *whether it exists or not*, that just shows that 'what it is like' is being used in a misleading way' (2011a, p. 426).

According to Block, the possibility of empty HOTs leaves the HOT proponent with three salient options. First, she could become a modest theorist. Such a theorist possesses no metaphysical ambitions. She simply aims to explain a form of consciousness – higher-order consciousness. She leaves an explanation of what-it's-like-ness for another day. Second, she could admit that non-existent conscious states matter in the same way as existent ones. Third, she could give up the game, and characterize her view not as a higher-order account, but as a version of a rival same order account, on which awareness is explained by reference to the representational properties of the state that is conscious.

### **3. Replies to Block**

David Rosenthal (2011) and Josh Weisberg (2011a) have separately replied to Block. Here I briefly review their replies. In section five I consider some implications for the debate more generally.

Rosenthal sees nothing troublesome in the *possibility* of radical misrepresentation. He draws a distinction between mental reality and mental appearance – HOT is intended to explain appearance alone. In other words, Rosenthal aims to explain why it *seems* to us that we are

seeing red, or feeling pain, or whatever. For Rosenthal, ‘all that matters for subjective appearances are the HOT’s content’ (2011, p. 436). It is important to note that at issue for Rosenthal is the difference between a conscious and an unconscious mental state – an explanation of mental appearance, for Rosenthal, suffices as an explanation of the consciousness of a mental state. Whether, simultaneously with the HOT, we actually possess the first-order qualitative state represented by the HOT is a question about mental reality – a question HOT theory does not address. According to Rosenthal, ‘one’s being in a state with qualitative character is independent of one’s being in a conscious state, and we need different theories to explain the two’ (2011, p. 435).<sup>1</sup>

Similarly, Weisberg sees no problem in the possibility of radical misrepresentation. Weisberg seems to think that the question of *which* state – the first-order state or the HOT – is conscious is partly terminological. If we speak of how it seems to the subject, the non-existent first-order state is what seems to be conscious. In this sense, it is correct to say that the conscious state the subject is in is an non-existent state: ‘Even though this state does not exist, it is conscious because the subject represents herself as being in that state’ (2011a, p. 442). However, Weisberg points out that such talk need not be taken too seriously. For in another sense, the HOT is doing the relevant work – the HOT is ‘the state *responsible* for there being something it’s like for the subject’ (2011a, p. 442).<sup>2</sup>

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<sup>1</sup> Since many equate qualitative with conscious, Rosenthal’s denial that qualitative states need be conscious might promote puzzlement. Rosenthal does not equate the two terms – he offers a theory of what makes a state qualitative, independent of what makes a state conscious, in his (2005, ch. 7).

<sup>2</sup> In what follows, I continue to follow Weisberg in speaking of the intentional content of the HOT as being responsible for subjective appearances. One might just as well say, as Rosenthal (2011) does, that the intentional content determines subjective appearances. The idea is that intentional content constitutes subjective appearances – there is something it is like for the subject just in case there is a HOT with a certain kind of content. Thanks to an anonymous reviewer for pressing me to clarify this, and to David Rosenthal for helpful discussion of this issue.

Block claims that empty HOTs are particularly problematic for ambitious theorists. In response, Rosenthal and Weisberg take issue with Block's understanding of the modest/ambitious distinction. Rosenthal argues that the notion of what-it's-like-ness is not common currency between himself and Block (2011, p. 434). According to Rosenthal, while Block sees what-it's-like-ness as a monadic property that attaches to qualitative states, 'there being something it's like for one to be in a state is simply its seeming subjectively that one is in that state' (2011, p. 433). Subjective appearances track the content of a HOT. As a result, what-it's-like-ness need not attach to qualitative states.

Weisberg offers a counter-distinction, between *modest* and *zealous* readings of what-it's-like-ness. On the modest reading, what-it's-like-ness is simply experience. On the zealous reading – which Weisberg pins on Block – what-it's-like-ness refers to a monadic property. Consequently, 'any explanation of phenomenal consciousness in exclusively cognitive, intentional, or functional terms will fail to capture, without remainder, what is really distinctive about phenomenal consciousness' (2011a, p. 438). Once one rejects this zealous reading, Weisberg argues, one can dodge Block's charge that HOT proponents cannot be ambitious theorists without misusing 'what it is like.' For HOT proponents can explain 'what it is like' taken to mean 'experience,' without needing a first-order qualitative state to instantiate a monadic property.

We can take two points away from these replies. First, Block's characterization of HOT is disputed. According to Rosenthal and Weisberg, Block's sufficient condition is right, but his necessary condition is wrong. There need not be any first-order state for there to be something it's like for – and thus, for something to *matter* to – the subject. If this is right, Block's second option for the HOT theorist loses some of its sting. Second, Block's understanding of what-it's-

like-ness is disputed in two separate ways. First, according to Rosenthal and Weisberg, what-it's-like-ness is not necessarily a monadic property. And second, what-it's-like-ness need not be instantiated by a first-order qualitative state. The representational content of a HOT works just fine. If this is right, Block's first option for the HOT theorist can be rejected.

The above discussion raises two questions. Are Rosenthal's and Weisberg's replies on target? And even if they are, can they avoid Block's third option – that of abandoning HOT theory for a version of the rival same order view? I take these questions up in section five. Before I do, however, I must consider Block's reply to the above replies.

#### **4. Block's reply**

In this section I highlight three parts of Block's (2011b) reply. In the next section I consider the implications for the debate more generally.

First, Block repeats the charge that a non-existent state cannot matter in the same way as an existent one. According to Block, 'Conscious agony and ecstasy occur, and they matter in a particular way when they occur. Unconscious perceptual states can occur but do not matter in that way. However, it is a mystery how something that does not exist can matter in that way' (2011b, p. 444).

Second, Block argues that – despite what HOT proponents claim – higher-order thoughts do not successfully capture mental appearance. Consider, for example, one of Rosenthal's examples of misrepresentation. As an example of it seeming to a subject that she is in one sensory state even though a different first-order sensory state exists, Rosenthal cites an experience of generic red which occurs without an experience of any specific shade of red. Block responds that in such cases, taking HOT seriously would prove misleading to science. Why?

What we want is an empirical answer to the question of whether a HOT, all by itself, can give us a conscious experience. Here is what Block says.

[C]ontrary to the HOT view, it is obvious that the real scientific issue is to be resolved via examining the visual system itself. For example, what we know about the opponent process system in the visual cortex allows for the possibility of activating *both ends of the red/green channel at once*, creating an experience of red and green all over at the same time. No scientist would take seriously the idea that the issue is to be resolved by examining the *neural basis of thought* to see whether a particular thought is assertoric or whether it satisfies the ‘inferential’ condition. (2011b, p. 445)

Third, Block denies having a view of what-it’s-like-ness as a monadic property. Recall that the charge is that on Block’s view what-it’s-like-ness – what separates an unconscious from a conscious state – is a non-relational property which conscious states uniquely instantiate. HOT, in contrast, holds that a conscious state is conscious in virtue of the way a HOT represents a separate (sometimes non-existent) state. Now, one way for Block to deny such a charge would be to endorse a same order theory of consciousness, on which a mental state is conscious in virtue of its representing both the world and itself. Same order theorists need not be committed to a monadic view of what-it’s-like-ness. For same order theorists, when a state bears a certain relation to itself – when the state represents itself as having certain properties – that state is conscious. Block does not go this route, however. According to him, ‘no scientific realist about consciousness can claim that consciousness is monadic given what we already know about what consciousness is in the brain already points to a highly relational state’ (2011b, p. 446). Block,

then, seeks to explain the instantiation of consciousness with what he calls ‘a neurally based account of what makes representations conscious when they are conscious’ (2011b, p. 447).

Block’s reply raises the following questions. Should we accept any (or all) of his three points? And what are the implications for HOT if we do (or do not)?

## **5. The morals of the story**

We are now in a position to draw some lessons from the above exchange. Recall that section three left us with two questions. Are Rosenthal’s and Weisberg’s replies on target? And even if they are, can they avoid Block’s third option – that of changing HOT theory to a version of the rival same order view? Section four left us with a few questions as well. Drawing the appropriate lessons requires paying attention to these questions, which I do below.

First, it seems to me that Rosenthal’s and Weisberg’s replies regarding option two are more or less on target. Block finds this option – admit that non-existent phenomenal states matter in the same way as existent phenomenal states (e.g., conscious pain) – extremely unattractive. But given Rosenthal’s and Weisberg’s replies, it is unclear whether this option is as unattractive as Block thinks. If what-it’s-like-ness must attach to first-order qualitative states, then it seems Block’s point could find some traction. But to demand this would be to beg the question against HOT, which explains what-it’s-like-ness in terms of a HOT’s representational content. Certainly it sounds odd to speak of a non-existent conscious state, but Weisberg’s treatment of this oddity seems to hit the right note. So long as we keep in mind that the HOT is responsible for there being what-it’s-like-ness, the oddity should not be too pressing.

Further, the HOT proponent can press Block concerning his appeal to the way a conscious state matters. As Rosenthal points out, one way a state can matter is by playing certain

functional roles. Does Block have a type of non-functional (or even non-causal) mattering in mind? It is doubtful that he does, since he goes on to deny holding a monadic view of consciousness. If not, though, then the point about mattering seems to lose its bite. A misrepresented conscious state will matter in the relevant way in virtue of the representational content of the HOT.

Regarding option one, again I think we should side with Rosenthal and Weisberg. HOT is intended as an explanation of state consciousness, or of how a mental state appears to one. This project is distinct from explaining higher-order consciousness. Thus, the HOT proponent can justifiably deny the modest option. The debate then turns on the nature of ‘what-it’s-like-ness.’ HOT proponents characterize ‘what-it’s-like-ness’ in terms of subjective appearances – how something seems to a subject. Block seems to want something more. In his (2011b), Block points out that the term *seem* can indicate a subjective appearance, or ‘a thought or in any case something cognitive rather than anything phenomenal’ (p. 444). Block’s complaint is that HOT – presumably since it relies on the representational content of thoughts – only explains how things seem to a subject in the latter, non-phenomenal sense. But HOT proponents do not take themselves to explain consciousness in only a cognitive or non-phenomenal sense. HOT attempts to give a representational account of subjective appearances. (In this regard, it is no different from same order theories, against which Block makes no complaints.) Why think that the representational content of a higher-order thought *cannot* explain subjective appearances in the relevant sense? Block does not say. Since he does not – and since nothing in the misrepresentation argument he is pressing bears on this issue – it seems fair to reject Block’s first option.

I turn to Block's claim that HOT offers misleading advice to science. Block's argument, which remains somewhat implicit, seems to be that since scientists can manipulate visual experiences by manipulating bits of visual cortex, no part of the brain responsible for higher-order thought could be playing a constitutive role in a given visual experience. But this claim is not obviously true. Plausibly, manipulating bits of visual cortex could causally influence those parts of the brain responsible for higher-order thought. We know that higher-order regions, such as dorsolateral prefrontal cortex, do play important roles in perceptual processes (Olson 2001). We have no evidence yet that such regions are *not* legitimate parts of a conscious experience's neural basis.<sup>3</sup> And contrary to Block's claim, scientists do take seriously the possibility that these regions are important for conscious experience (e.g., Flohr 2000; Lau 2008; Rees et al. 2002). Admittedly, the matter is empirically underdetermined. But given this, it seems unwise to reject the empirical possibilities suggested by HOT.

The upshot of these arguments is that Block's new argument presents no new problem for HOT. The HOT proponent can accept Block's second option, and offer an account which aims to explain subjective appearances. However, for all that has been said, Block's third option for the HOT proponent remains live.

I take it that the worry is that taking the second option – which emphasizes that the HOT is the state responsible for what-it's-like-ness – brings HOT closer to same order theories in the sense that both camps maintain that only one state is ultimately responsible for subjective appearances. If this is the worry, it seems that several things might still separate HOT from same

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<sup>3</sup> Block (2007) explicates the notion of a state's neural basis as follows. 'The *total* neural basis of a state with phenomenal character C is itself sufficient for the instantiation of C. The *core* neural basis of a state with phenomenal character C is the part of the total neural basis that distinguishes states with C from states with other phenomenal characters or phenomenal contents, for example the experience as of a face from the experience as of a house' (p. 482).

order views. For example, the following central difference remains. On same order views, the conscious state represents itself. On HOT, the higher-order thought in question does not represent *itself*, but a distinct (sometimes non-existent) state.

So it seems that taking option two does not collapse HOT into a same order view, and thus that option three is a red herring. Granted, nothing said here indicates that we should prefer HOT to a same order view – a full consideration of the issues separating HOT and same order views is beyond the scope of this paper. However, one salient point deserves mention. A primary motivation driving the development of same order theories has been to avoid the problem of radical misrepresentation (for discussion, see, e.g., Levine 2006; Weisberg 2011b). If I (following Rosenthal and Weisberg) am right, and this problem is not pressing for HOT, then a primary motivation for same order theories is undermined.

The above discussion is relevant to another issue, which comes to the fore when we pay attention to Block's denial of the monadic property charge. Block denies the charge by appealing to considerations at a neuro-functional level of explanation. In his (2011a), Block points out that 'all the major recent accounts of what consciousness is in the brain have been heavily relational' (p. 420). In his (2011b), Block asserts that he favors 'a neurally based account of what makes representations conscious when they are conscious' (p. 447). The idea seems to be that since conscious states are realized in the brain, and since recent accounts of such states are given (at least in part) in terms of the relations between neural complexes, to ascribe consciousness to a state is to ascribe a relational property.

Here I grant Block's denial of the monadic property charge. The point I wish to draw out is as follows. In appealing to notions such as mental state, thought, and inference, HOT seeks to explain awareness at a certain *psycho-functional* level. For HOT proponents, consciousness is a

relational property in virtue of certain relations between mental states. In appealing to neurally based accounts, Block seeks an explanation of awareness at a *neuro-functional* level. For Block, consciousness is a relational property in virtue of certain relations between neural complexes.<sup>4</sup> Does this give Block some explanatory traction unavailable to HOT proponents? Certainly neuro-functional considerations can be legitimately marshaled against psycho-functional accounts in some cases. But absent an argument to this effect, it is unclear whether this is one of those cases.<sup>5</sup> Indeed, nothing prevents the HOT proponent from offering neuro-functional considerations in *support* of her view. As we saw above, the jury is still out on whether HOT is vindicated by neuroscience.

The question at hand is whether HOT gives the best explanation of subjective appearances. On this issue, it seems that Block is offering two different kinds of argument against HOT, as if they were one. The first is the argument that HOT's best way out of the problem of misrepresentation is to become a same order theory. I have argued that although the debate between same and higher order views is live, nothing in what Block says should motivate the HOT proponent to make such a move.

But Block seems in places to be more interested in having a second kind of debate. This debate would be between order views (e.g., higher or same order views) and what we might call a no-order view. The no-order view, as I envision it, maintains that the question of the order of a state is *irrelevant* to the explanation of subjective appearances. A no-order proponent maintains that whatever view adequately explains subjective appearances does so without needing to speak of a state's order.

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<sup>4</sup> Thanks to an anonymous reviewer for pressing me to clarify this point.

<sup>5</sup> Block does offer arguments like this in his (2007). But they play no role in the point at issue.

Consider, for example, an intermediate-level view of subjective appearances. Intermediate-level views hold that we should identify ‘conscious perceptual states with states at intermediate levels of sensory-processing hierarchies’ (Mandik 2010, 645). On Jesse Prinz’s (2007) intermediate-level view, attention plays a central role: phenomenal states are intermediate-level states to which subjects attend. But for Prinz, attentional states are not higher-order thoughts. Prinz does not speak of the order of attentional states at all. Instead, he holds out hope for an account of attention given in ‘precise neurocomputational terms’ (2007, p. 186). Until we have one, Prinz characterizes attention in the following way: ‘attention is a process that allows information to flow from perceptual systems to systems involved in working memory’ (2007, p. 186). I mention Prinz’s view not to saddle Prinz with a no-order view. My point is that a no-order proponent *could* point to a view like Prinz’s and argue that it adequately explains subjective appearances, without speaking of a state’s order. Of course, order theorists could just as well respond by specifying what no-order views leave out. It might be, for example, that an intermediate-level view should be integrated with a same or higher order view.<sup>6</sup>

As I have conceived it, the debate between no-order and order theorists is a debate about the kinds of explanations consciousness requires. Although assumptions often guide the ways theorists approach purported explanations of consciousness, these assumptions often remain implicit. What is the best way to integrate extant neuroscientific evidence with extant explanatory models? What kind of characterizations of the mind – and, crucially, of conscious states – are appropriate? Is a mechanistic explanation of subjective appearances enough, or must we incorporate psycho-functional models – and perhaps more? These are important and open

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<sup>6</sup> The ‘no-order’ terminology is rendered somewhat unfortunate by the fact that some refer to views such as Prinz’s as first-order views. Here I adopt the no-order terminology simply to emphasize that the no-order proponent, as I envision her, would argue that the issues which divide same order from higher-order theorists can be circumvented by a different kind of account.

questions (see, e.g., Piccinini and Craver 2011; Weiskopf 2011), and it seems to me that an explicit debate – wherein no-order and order theorists take up these questions – is one worth having. But this debate is muddled if it is not kept somewhat distinct from the debate between same order and higher-order theorists. Progress on either debate requires that we keep them as distinct as possible.

## 6. Conclusion

In this paper I have considered a recent exchange between Ned Block and proponents of the higher-order thought theory (HOT) of consciousness. I have argued, first, that Block's new argument presents no new problem for HOT. Further, I have argued that in this exchange Block runs together two debates which we should keep distinct – one between same order and higher-order theorists, and one between no-order and order theorists. Both are debates worth having, and I have suggested that keeping them distinct will yield progress for consciousness studies.<sup>7</sup>

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<sup>7</sup> The author would like to thank David Rosenthal and Josh Weisberg for helpful discussion of the issues, and two anonymous reviewers for helpful comments on an earlier draft.

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