

# Reply to Gennaro

Fred Adams and Charlotte Shreve

**Abstract:** Last year Charlotte Shreve and I (Adams and Shreve 2016) presented an argument that synesthesia contains evidence against higher order thought theories of consciousness. Rocco Gennaro (2016) took up the challenge and argued that H.O.T. theories like his could handle the example and dismiss the argument. Below we suggest otherwise. We think the traditional versions of H.O.T. theory are still vulnerable to our argument and we maintain that Gennaro's version is as well.

**Keywords:** autism, consciousness, Dretske, Gennaro, Higher-Order Thought Theories, Rosenthal, synesthesia.

## Introduction

Last year Charlotte Shreve and I (Adams and Shreve 2016) presented an argument that synesthesia contains evidence against higher order thought theories of consciousness. Rocco Gennaro (2016) took up the challenge and argued that H.O.T. theories like his could handle the example and dismiss the argument. Below we suggest otherwise. We think the traditional versions of H.O.T. theory are still vulnerable to our argument and we maintain that Gennaro's version is as well.

## 1. Introspection

Gennaro (2016) takes issue with our seat-pressure case. In that case we say that, on the H.O.T. theory, the H.O.T. is supposed to make one's experience of the pressure being exerted conscious. He says this is an appeal to 'introspection' and, on his view, it is not introspection. He claims that on his view an experience is 'intrinsically conscious' because there is an element within it that is directed on that very state (Gennaro 2012, 55). For him, if there were an H.O.T. that lay outside the experience and that made the state conscious, then that would be a kind of introspection.

First, we didn't claim this was introspection. Indeed, it is a kind of 'extrospection' upon the pressure being exerted on the seat. Attention is directed at least partially outwardly. Turning one's attention on something is not

necessarily introspecting (which even Gennaro's view of experience's inner self-referential element must accept).<sup>1</sup>

Second, it is true that we were thinking mainly of Rosenthal's traditional H.O.T. theory and not Gennaro's particular version of it. Yet his view has many of the same elements. He does admit that there are non-conscious mental states. And he does admit that they can be made conscious by H.O.T.s. So we are sure that there are sufficient similarities between Rosenthal's and Gennaro's view that allow them both to be classified as H.O.T. theories. On both views, there is one thing that is not conscious and another thing that may or may not be conscious, and when the latter takes the former as its content, it makes the former conscious. The main difference is that for Gennaro an experience has both parts in its internal structure – so that he can claim experiences are 'intrinsically conscious' because they are made so by elements of their internal structure (that he calls 'a metapsychological thought').

So we think Gennaro wants to use the term 'introspection' only when an H.O.T. outside a state (extrinsic to the state) makes the state conscious. And that is why he objects to our example of the experience of the pressure on the seat becoming conscious via an H.O.T. For us, there is still a structural similarity. As we say, there is one part of an experience that is not conscious but makes the other part of the experience conscious by being 'directed' at it. The structure is the same. The only difference is where things are in relation to the experience itself (inside or outside).

Even if limiting our claim to just Rosenthal's H.O.T. theory, we would be satisfied that synesthesia presents a problem for the theory. But we think it presents a problem for Gennaro's version as well.

And by the way, Gennaro accepts the TP principle. TP says "A conscious state is a state whose subject is, in some way, aware of being in it." (Rosenthal 2005) To us that sounds a lot like introspection.

## **2. Conscious Experiences One is Not Conscious of Having**

Lastly, Gennaro asserts:

For example, if I am having a conscious desire or pain, I am aware of having that desire or pain. Conversely, the idea that I could have a conscious state while totally unaware of being in that state seems very odd (if not an outright contradiction). (Gennaro 2016, 444)

There are alternative views to H.O.T. theories on which this is not only not contradictory, but quite plausible. As Gennaro knows, Dretske's (1993) view of conscious experience makes it possible to be in a conscious state (state of seeing something) and not know one is in that state. Dretske gives several examples of

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<sup>1</sup> "According to the WIV, what makes mental states conscious is intrinsic to conscious states, but a kind of inner self-referential and relational element is also present within the structure of such states" (Gennaro 2012, 55).

'change blindness,' where one is presented with a visual array and later presented with another different array. One consciously peruses all items visually presented in the array, and therefore experiences the thing which is different between the presentations. It could be a missing dot or even a missing engine on Boeing 747. One has a conscious experience of the item which constitutes the difference between the presentations, but one does not have a higher order thought that one is experiencing the difference. Even on Gennaro's (2012) theory of 'WIV' (Wide Intrinsicity), one part of someone's experience would be directed at the part of the experience that was 'of the world' but the 'metapsychological thought' part of the experience would not tell you that the other world-directed part was your experiencing of the difference in arrays. So you can be in a state which is the conscious experience of the difference in arrays, but not be conscious that it is *the difference* that you are experiencing. You are in a conscious state that you are not conscious that you are in. This is not introspection. And there is no H.O.T. making your experience of the difference conscious.

Some H.O.T. theorists, such as Rosenthal (2002, 408) would respond that when one is consciously experiencing the item in the array, one must be having an H.O.T. about it (applying some concept) to one's experience. But it seems to us that there are cases where one has a conscious experience of a kind of thing for which one lacks a concept. Indeed, Gennaro himself (2012, 157) gives us this kind of case. He admits that one can see a whistle without seeing it as a whistle.<sup>2</sup> Thus, one can have a basic visual perceptual experience of a whistle without applying the concept of a whistle. One can know what it (the whistle) looks like, even though one would not describe it as having the look of a whistle, because one lacks the concept of whistle or the concept of look of a whistle. Nonetheless, one would be able to have the conscious visual presentation of the visual look of a whistle without applying an H.O.T. or 'metapsychological thought' about whistles. He cannot shake this off by appealing to more 'coarse-grained' concepts (2012, 170), because you might actually have a presentation of the whistle-making parts but still not know it is a whistle.

Similarly, an infant in a crib can experience the mobile above its head but not apply an H.O.T. of any kind that has the concept 'mobile' or 'experience of mobile.' So no higher order anything is involved in producing the infant's conscious visual presentation of the mobile. Yet it is having a conscious visual experience of the mobile.

We know Gennaro disagrees (2012, 220-224). He believes that infants can recognize agents (self-caused behavior), can form thoughts about themselves (but as causers, not necessarily as minds). They engage in joint attention, and recognize goal-directed behavior. We say that this still doesn't show infants have concepts of their own experiences which are needed for H.O.T.s.

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<sup>2</sup> Gennaro discusses this case of someone with associative agnosia.

Lastly, when one looks briefly at the words on a page one may have a visual presentation of each of the words. One consciously experiences them all. But one does not apply the concept 'word' to each and every single word on the page. Nonetheless, one consciously experiences every word. No higher order thought is required to generate the conscious visual presentation of the words on the page. There are too many words and too little time for higher order thoughts to produce each conscious element.

### **3. H.O.T.s Sub-Personal and Higher Order?**

Another point of opposition that Gennaro raises to our paper is his claim that H.O.T.s can be sub-personal, unconscious, and higher-order. To begin, we don't see how this can be true. They might be able to be non-conscious. Most versions of H.O.T. theory allow for non-conscious H.O.T.s. This is one of our problems with them, viz. how can something non-conscious bestow something it doesn't have (consciousness) on something else (an experience or thought) that also lacks it?

Gennaro also maintains that H.O.T.s are somehow 'presupposed' by any experience or conscious mental state. This is partly why he thinks that every experience is conscious and why he thinks the contrary view makes no sense. We have already explained above, why the contrary view makes sense to us, so we are still struggling with the idea that every experience or conscious state 'presupposes' H.O.T.s. We just don't understand the view.

We also don't understand his response that H.O.T.s can be both sub-personal and higher-order. In his explanation he appeals to the processes of 'higher-brain' areas (feed forward and feedback loops and the like). However, H.O.T.s are not equivalent to events in higher brain areas. There can be many events in so-called 'higher brain areas' that have nothing to do with consciousness or thoughts of any kind (higher or not). Indeed, much processing of information is below personal level of processing. And by that we mean, much information never makes it into experiences or thoughts of the person of any kind (conscious or not). An H.O.T. has to have some conceptual resources. If it is about a thought or an experience, it has to activate the concept of a thought or experience. Not all events in higher brain areas activate concepts (much less concepts of other mental states). So it will take more work to explain how a mental state can be both higher-order and sub-personal at the same time.<sup>3</sup>

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<sup>3</sup> Brain scans of second language learners show from initial activations patterns, changes over time prior to the subject understanding of the new language (White, Genesee, and Steinhauer 2012). During these changes, the subject reports still not understanding and things sounding 'the same.' Nonetheless the scans tell a different story. One can detect changes in firing patterns in higher areas of the brain. None of this makes it into the subject's person-level thoughts. There are no H.O.T.s because the processing is sub-personal. When subjects hear the new language the first time and the second time, they say it 'sounds the same,' but again their brains tell a different story because wave patterns are different the second time.

#### 4. Concept Acquisition and Autism

We will close with two problems we see for his view: concept acquisition and autism. On Gennaro's view, when one consciously experiences X, one must have an H.O.T. of the form 'I'm experiencing X.' But this raises the problem of how can one acquire new concepts? Dretske (1993) gives the example of the first time he saw an armadillo. He had a conscious visual presentation of the armadillo, but didn't know what it was. He used the incoming information about armadillos to form the concept of an armadillo. Gennaro's view will require that to have a conscious experience of the look of an armadillo, one knows already what an armadillo is. Otherwise, one will consciously experience only an animal with a certain shape and moving in a certain way. But nothing specific to what it is to be an armadillo will be consciously experienced – because one doesn't yet have the concept of what an armadillo is. So one can't have an H.O.T. that one is having a visual experience of an armadillo (only of a creature or an animal or some such). So how does one ever consciously learn what an armadillo is or looks like? It seems to us this makes concept learning impossible for new empirical concepts. On our view, one must be able to receive new information about Xs and consciously experience Xs and their looks (perceptible properties) in order to form the concept of an X.

Gennaro's view might rely on some innate concepts (2012, 191-197), but none of those is going to be specific to what makes something an armadillo (as opposed to something else). So none of those innate concepts will generate the new empirical concept – armadillo.

Lastly, we think autism will be a problem for Gennaro. Why? Because subjects with severe forms of autism are susceptible to pop-out synesthesia of the kind that we described in our initial paper (Adams and Shreve 2016, Baron-Cohen et al. 2013). Now a hallmark of severe autism is what Baron-Cohen (1997) called 'mind-blindness.' This is the inability to apply mental concepts to self or others. People with severe autism have no trouble understanding people as physical systems with physical properties that are explicable in terms of natural physical laws. But when it comes to beliefs, desires, intentions, hopes, fears, wishes and other mental causes, severely autistic individuals simply do not understand behavior originating from these causes. Such purposive behavior is a complete mystery to them. Thus, they do not engage in applying mental concepts to themselves or others.

Consequently, when a person with severe autism consciously experiences the pop-out of synesthesia, it cannot be the result of applying an H.O.T. to their experience because they don't employ H.O.T.s about mental states (of self or others).<sup>4</sup>

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<sup>4</sup> About autism, Gennaro (2012) thinks autistic individuals can have self-consciousness and that reflective self-awareness is not required for H.O.T.s. But how can it be a self-awareness if

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An autistic person may see the red circle or triangle hidden among the black numbers and figures in a pop-out experiment. The colored shape pops out to them consciously and they experience it. But how can they be having an H.O.T. about *their experience* if that requires a concept they lack (of an experience itself)? They can't! So an H.O.T. theory lacks the tools to explain how these pop-outs can be conscious experiences in severely autistic individuals.

## 5. Conclusion

So in conclusion, we think synesthesia is still a problem for H.O.T. theory and even for Gennaro's particular version of it. We still don't understand his view that an H.O.T. can be 'sub-personal' and 'higher-order' at the same time. We've given reasons against his appeal to explaining this in terms of processing in 'higher brain areas.' That alone does not distinguish processing that is an H.O.T. from processing that is not. What is more, we think Gennaro's own version of H.O.T. has problems with the explanation of how concept acquisition is possible. And we maintain that he will not be able to explain the conscious 'pop-out' experiences of persons with autism.<sup>5</sup>

## References:

- Adams, Fred and Charlotte Shreve. 2016. "What Can Synesthesia Teach Us about Higher Order Theories of Consciousness?" *Symposion* 3(3): 251-257.
- Baron-Cohen, Simon, Donielle Johnson, Julian Asher, Sally Wheelwright, Simon E. Fisher, Peter K. Gregersen, and Carrie Allison. 2013. "Is Synaesthesia More Common in Autism?" *Molecular Autism*, 1 November: 4-40. doi:10.1186/2040-2392-4-40.
- Baron-Cohen, Simon. 1997. *Mindblindness*. Cambridge, M.A.: MIT Press.
- Dretske, Fred. 1993. "Conscious Experience." *Mind* 102: 263-283.
- Rosenthal, David. M. 2002. "Explaining Consciousness." In *Philosophy of Mind, Classical and Contemporary Readings*, edited by David J. Chalmers, 406-421. New York: Oxford University Press.
- Gennaro, Rocco. 2012. *The Consciousness Paradox*. Cambridge, M.A.: MIT Pres.
- . 2016. "H.O.T. Theory, Concepts, and Synesthesia: A Reply to Adams and Shreve." *Symposion* 3(4): 443-448.
- White, Erin Jacquelyn, Fred Genesee, and Karsten Steinhauer. 2012. "Brain Responses before and after Intensive Second Language Learning: Proficiency Based Changes and First Language Background Effects in Adult Learners." *PLoS ONE* 7(12): e52318. doi:10.1371/journal.pone.0052318

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it is not reflective and self-aware? They must have something to make a thought self-referential.

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