

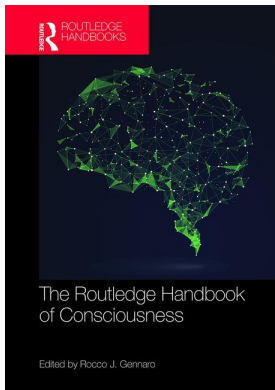
This article was downloaded by: 10.3.97.143

On: 06 Dec 2023

Access details: *subscription number*

Publisher: *Routledge*

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: 5 Howick Place, London SW1P 1WG, UK



## **The Routledge Handbook Of Consciousness**

Rocco J. Gennaro

### **Representational Theories of Consciousness**

Publication details

<https://www.routledgehandbooks.com/doi/10.4324/9781315676982-9>

Rocco J. Gennaro

**Published online on: 26 Mar 2018**

**How to cite :-** Rocco J. Gennaro. 26 Mar 2018, *Representational Theories of Consciousness from: The Routledge Handbook Of Consciousness* Routledge

Accessed on: 06 Dec 2023

<https://www.routledgehandbooks.com/doi/10.4324/9781315676982-9>

**PLEASE SCROLL DOWN FOR DOCUMENT**

Full terms and conditions of use: <https://www.routledgehandbooks.com/legal-notices/terms>

This Document PDF may be used for research, teaching and private study purposes. Any substantial or systematic reproductions, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The publisher shall not be liable for an loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

# 8

## REPRESENTATIONAL THEORIES OF CONSCIOUSNESS

*Rocco J. Gennaro*

A question that should be answered by any theory of consciousness is: What makes a mental state a conscious mental state? The focus of this chapter is on “representational theories of consciousness,” which attempt to reduce consciousness to “mental representations” instead of directly to neural states. Examples of representational theories include *first-order* representationalism (FOR), which attempts to explain conscious experience primarily in terms of world-directed (or first-order) intentional states, and *higher-order* representationalism (HOR), which holds that what makes a mental state *M* conscious is that a HOR is directed at *M*. A related view, often called “self-representationalism,” is also critically discussed in this chapter.

### 1 Representational Theories of Consciousness

Some theories attempt to reduce consciousness *in mentalistic terms* such as “thoughts” and “awareness.” One such approach is to reduce consciousness to mental representations. The notion of a “representation” is of course very general and can be applied to photographs and various natural objects, such as the rings inside a tree. Indeed, this is part of the appeal of representational theories, since much of what goes on in the brain might also be understood in a representational way. Further, mental events are thought to represent outer objects partly because they are caused by such objects in, say, cases of veridical visual perception. Philosophers often call these mental states “intentional states” which have representational content, that is, mental states which are “directed at something,” such as when one has a thought about a tree or a perception of a boat. Although intentional states, such as beliefs and thoughts, are sometimes contrasted with phenomenal states, such as pains and color experiences, many conscious states have both phenomenal and intentional properties, such as in visual perceptions.

The view that we can explain conscious mental states in terms of representational states is called “representationalism.” Although not automatically reductionistic, most representationalists believe that there is room for a second-step reduction to be filled in later by neuroscience. A related motivation for representational theories of consciousness is that an account of intentionality seems more easily given in naturalistic terms, such as in causal theories whereby mental states are understood as representing outer objects in virtue of some reliable causal connection. The idea is that if consciousness can be explained in representational terms and representation can be understood in physical terms, then there is the promise of a naturalistic theory of consciousness. Most generally, however,

representationalism can be defined as the view that the phenomenal properties of experience (that is, the “qualia” or “what it is like” of experience) can be explained in terms of the experiences’ representational properties. For example, when I look at the blue sky, what it is like for me to have a conscious experience of the sky is simply identical with my experience’s representation of the blue sky, and the property of “being blue” is a property of the representational object of experience.

It should be noted that the precise relationship between intentionality and consciousness is itself an ongoing area of research with some arguing that genuine intentionality actually presupposes consciousness in some way (Searle 1992; Siewart 1998; Horgan and Tienson 2002; Pitt 2004). If this is right, then it wouldn’t be possible to *reduce* consciousness to intentionality as representationalists desire to do. But representationalists insist instead that intentionality is explanatorily prior to consciousness (Tye 2000; Carruthers 2000; Gennaro 1995; Gennaro 2012, ch. 2). Indeed, representationalists typically argue that consciousness requires intentionality but not vice versa. Few, if any, today hold Descartes’ view that mental states are *essentially* conscious and that there are no unconscious mental states.<sup>1</sup>

## 2 First-Order Representationalism

A first-order representational (FOR) theory of consciousness is one that attempts to explain conscious experience primarily in terms of world-directed (or first-order) intentional states. The two most cited FOR theories are those of Fred Dretske (1995) and Michael Tye (1995, 2000), though there are many others as well. Tye’s theory is the focus of this section. Like other FOR theorists, Tye holds that the representational content of my conscious experience is identical with the phenomenal properties of experience. Tye and other representationalists often use the notion of the “transparency of experience” in support for their view (Harman 1990). This is an argument based on the phenomenological first-person observation that when one turns one’s attention away from, say, the blue sky and onto one’s experience itself, one is still only aware of the blueness of the sky (Moore 1903). The experience *itself* is not blue, but rather one “sees right through” one’s experience to its representational properties, and there is nothing else to the experience over and above such properties.

Despite some ambiguity in the notion of transparency (Kind 2003), it is clear that not all mental representations are conscious, and so the key question remains: What distinguishes conscious from unconscious mental states (or representations)? Tye defends what he calls “PANIC theory.” The acronym “PANIC” stands for poised, abstract, non-conceptual, intentional content. Tye holds that at least some of the representational content in question is non-conceptual (N), which is to say that the subject can lack the concept for the properties represented by the experience in question, such as an experience of a certain shade of red that one has never seen before. The exact nature, or even existence, of non-conceptual content of experience is itself a highly debated issue in philosophy of mind (Gunther 2003; Gennaro 2012, ch. 6). But conscious states clearly must have “intentional content” (IC) for any representationalist. Tye also asserts that such content is “abstract” (A) and so not necessarily about particular concrete objects. This qualification is needed to handle cases of hallucinations where there are no concrete objects at all. Perhaps most important for mental states to be conscious, however, is that such content must be “poised” (P), which is an importantly functional notion. Tye explains that the

key idea is that experiences and feelings... stand ready and available to make a direct impact on beliefs and/or desires. For example...feeling hungry...has an immediate cognitive effect, namely, the desire to eat...States with non-conceptual content that are not so poised lack phenomenal character [because]...they arise too early, as it were, in the information processing.

(Tye 2000: 62)

One frequent objection to FOR is that it cannot explain all kinds of conscious states. Some conscious states do not seem to be “about” or “directed at” anything, such as pains, itches, anxiety, or after-images, and so they would be non-representational conscious states. If so, then conscious states cannot generally be explained in terms of representational properties (Block 1996). Tye responds that pains and itches do represent, in the sense that they represent parts of the body. After-images and hallucinations either misrepresent (which is still a kind of representation) or the conscious subject still takes them to have representational properties from the first-person point of view. Tye (2000) responds to a whole host of alleged counter-examples to FOR. For example, with regard to conscious emotions, he says that they “are frequently localized in particular parts of the body... For example, if one feels sudden jealousy, one is likely to feel one’s stomach sink... [or] one’s blood pressure increase” (2000: 51). Tye believes that something similar is true for fear or anger. Moods, however, seem quite different and not localizable in the same way. But, still, if one feels, say, elated, then one’s overall conscious experience is changed.<sup>2</sup>

Others use “inverted qualia” arguments against FOR. These are hypothetical cases where behaviorally indistinguishable individuals have inverted color perceptions of objects, such as person A visually experiences a lemon in the same way that person B experiences a ripe tomato, likewise for all yellow and red objects. If it is possible that there are two individuals whose color experiences are inverted with respect to the objects of perception, we would have a case of *different* phenomenal experiences with the *same* represented properties. The strategy is to think of counter-examples where there is a difference between the phenomenal properties in experience and the relevant representational properties in the world. These objections can perhaps be answered by Tye (e.g. in Tye 2000) and others in various ways, but significant debate continues. Moreover, intuitions dramatically differ as do the plausibility and value of these so-called “thought experiments.”

A more serious objection to Tye’s theory might be that what seems to be doing most of the work on his account is the functional-sounding “poised” notion, and thus he is not really explaining phenomenal consciousness in *entirely* representational terms (Kriegel 2002). It is also unclear how a disposition can confer *actual* consciousness on an otherwise unconscious mental state. Carruthers, for example, asks: “How can the mere fact that an [unconscious state] is now in a position to have an impact upon the...decision-making process [or beliefs and desires] confer on it the subjective properties of feel and ‘what-it-is-likeness’ distinctive of phenomenal consciousness?” (2000: 170).<sup>3</sup>

### 3 Higher-Order Representationalism

Recall the key question: What makes a mental state a *conscious* mental state? There is also a tradition that has attempted to understand consciousness in terms of some kind of *higher-order* awareness and this intuition has been revived by a number of contemporary philosophers (Armstrong 1981; Rosenthal 1986, 1997, 2002, 2005; Lycan 1996, 2001; Gennaro 1996, 2004a, 2012). The basic idea is that what makes a mental state M conscious is that it is the object of a higher-order representation (HOR). A HOR is a “meta-psychological” state, that is, a mental state directed at another mental state. So, for example, my desire to write a good chapter becomes conscious when I am (non-inferentially) “aware” of the desire. Intuitively, it seems that conscious states, as opposed to unconscious ones, are mental states that I am “aware of” being in. So conscious mental states arise when two (unconscious) mental states are related in a certain way, namely, that one of them (the HOR) is directed at the other (M).

This intuitively appealing claim is sometimes referred to as the Transitivity Principle (TP):

(TP) A conscious state is a state whose subject is, in some way, aware of being in the state.

Conversely, the idea that I could be having a conscious state while totally *unaware* of being in that state seems very odd (if not an outright contradiction). A mental state of which the subject is completely unaware is clearly an *unconscious* state. For example, I would not be aware of having a subliminal perception and thus it is an unconscious perception. Any theory that attempts to explain consciousness in terms of higher-order states is known as a “higher-order representational theory of consciousness.” It is best initially to use the more neutral term “representation,” because there are many versions of higher-order theory depending upon how one characterizes the HOR itself.

#### 4 Higher-Order Thought (HOT) Theories

The two main kinds of HOR theory are higher-order thought (HOT) and higher-order perception (HOP). HOT theorists, such as David Rosenthal, think it is better to understand the HOR as a thought containing concepts. HOTs are treated as cognitive states involving some kind of conceptual component. HOP theorists hold that the HOR is a perceptual or experiential state of some kind (Lycan 1996), which does not require the kind of conceptual content invoked by HOT theorists. Although HOT and HOP theorists agree on the need for a HOR theory of consciousness, they do sometimes argue for the superiority of their respective positions (Rosenthal 2004; Lycan 2004). I personally favor a version of the HOT theory of consciousness for the reasons discussed here and elsewhere (Gennaro 1996, 2012). HOT theory is arguably well motivated by the Transitivity Principle and offers a reasoned way to differentiate conscious and unconscious mental states. It may not currently be the best strategy to *directly* reduce consciousness to neurophysiology, but not necessarily because of the usual objections to materialism having to do with the “hard problem” or “explanatory gap” (Gennaro 2012, chs. 2 and 4).

There is something like TP in premise 1 of Lycan’s (2001) more general argument for HOR. The entire argument runs as follows:

- 1 A conscious state is a mental state whose subject is aware of being in it.
- 2 The “of” in 1 is the “of” of intentionality; what one is aware of is an intentional object of the awareness.
- 3 Intentionality is representational; a state has a thing as its intentional object only if it represents that thing.

*Therefore*, 4 Awareness of a mental state is a representation of that state (from 2, 3).

*Therefore*, 5 A conscious state is a state that is itself represented by another of the subject’s mental states (1, 4).

The intuitive appeal of premise 1 leads to the final conclusion – (5) – which is just another way of stating HOR. Another interesting rationale for HOR, and HOT theory in particular, is as follows (based on Rosenthal 2004: 24): A non-HOT theorist might still agree with HOT theory as an account of *introspection* or *reflection*, namely, that it involves a *conscious* thought about a mental state. This seems to be a common sense definition of introspection that includes the notion that introspection involves conceptual activity. It also seems reasonable to hold that when a mental state is unconscious, there is no HOT at all. But then, it stands to reason that there should be something in between those two cases, that is, when one has a first-order (i.e. world-directed) conscious state. So what is in between having no HOT at all and having a conscious HOT? The answer is an unconscious HOT, which is precisely what HOT theory says. In addition, this can neatly explain what happens when there is a shift from a first-order conscious state to an introspective state: an unconscious HOT becomes conscious (more on this below).

HOT theorists also hold that one must become aware of the lower-order (LO) state *non-inferentially*. We might suppose, say, that the HOT must be caused noninferentially by the LO state to make it conscious. The point of this condition is mainly to rule out alleged counterexamples to HOT theory, such as cases where I become aware of my unconscious desire to kill my boss because I have consciously inferred it from a session with a psychiatrist, or where my envy becomes conscious after making inferences based on my own behavior. The characteristic *feel* of such a conscious desire or envy may be absent in these cases, but since awareness of them arose via conscious inference, the higher-order (HO) theorist accounts for them by adding this noninferential condition.

A common initial worry to HOR theories is that they are circular and lead to an infinite regress. It might seem that HOT theory results in circularity by defining consciousness in terms of HOTs, that is, we should not explain a concept by using that very same concept. It also might seem that an infinite regress results because a conscious mental state must be accompanied by a HOT, which, in turn, must be accompanied by another HOT *ad infinitum*. However, the standard reply is that when a conscious mental state is a first-order world-directed state, the HOT is not itself conscious; otherwise, circularity and an infinite regress would follow. When the HOT is itself conscious, there is a yet higher-order (or third-order) thought directed at the second-order state. In this case, we have *introspection*, which involves a conscious HOT directed at an inner mental state. When one introspects, one's attention is directed back into one's mind. For example, what makes my desire to write a good chapter a conscious *first-order* desire is that there is an unconscious HOT directed at the desire. In this case, my conscious focus is directed at my computer screen, so I am not consciously aware of having the HOT from the first-person point of view. When I *introspect* that desire, however, I then have a conscious HOT (accompanied by a yet higher, third-order, HOT) directed at the desire itself (see Rosenthal 1986, 1997). Thus, what seems to be an objection is really mainly a request to clarify some further details of the theory (see Figure 8.1).

There are several other objections to HOT theory: First, some argue that various animals (and even infants) are not likely to have the conceptual sophistication required for HOTs, and so that would render animal (and infant) consciousness very unlikely (Dretske 1995; Seager 2004). Are cats and pigs capable of having complex HOTs such as "I am in mental state M"? Although most who bring forth this objection are not higher-order theorists, Peter Carruthers (1989, 2000) is one HOT theorist who actually embraces the conclusion that (most) animals do not have phenomenal consciousness. However, it can be argued that the HOTs need not be as sophisticated as it might initially appear and there is other ample comparative neurophysiological evidence supporting the conclusion that animals have conscious mental states (Gennaro 1993, 1996). Most HOT theorists do not want to accept the absence of animal or infant consciousness as a consequence of holding the theory.

The debate on this issue has continued over the past two decades,<sup>4</sup> but to give one example, Clayton and Dickinson and their colleagues have reported demonstrations of memory for time in scrub jays (Clayton, Bussey, and Dickinson 2003: 37). Scrub jays are food-caching birds, and when they have food they cannot eat, they hide it and recover it later. Because some of the food is preferred but perishable (such as crickets), it must be eaten within a few days, while other food (such as nuts) is less preferred but does not perish as quickly. In cleverly designed experiments using these facts, scrub jays are shown, even days after caching, to know not only *what* kind of food was *where* but also *when* they had cached it (see also Clayton, Emery, and Dickinson 2006). This strongly suggests that the birds have some degree of self-concept (or "I-concept"), which can figure into HOTs. That is, such experimental results seem to show that scrub jays have episodic memory, which involves a sense of self over time. Further, many crows and scrub

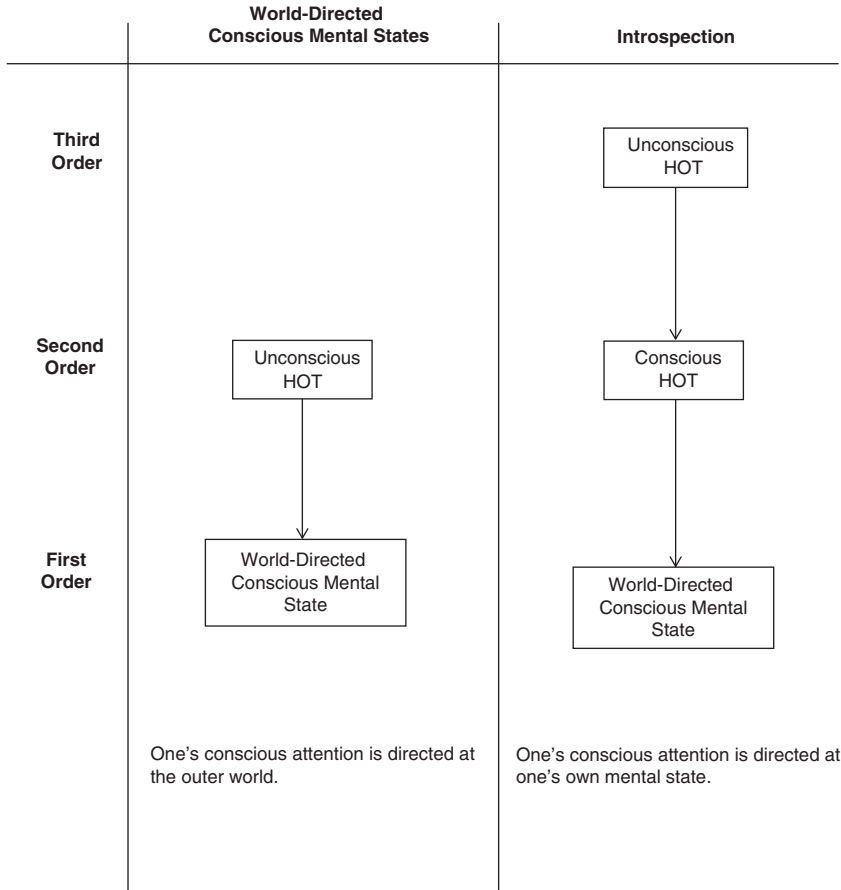


Figure 8.1 The Higher-Order Thought (HOT) Theory of Consciousness

jays return alone to caches they had hidden in the presence of others and recache them in new places (Emery and Clayton 2001). This suggests that they know that *others* know where the food is cached, and thus, to avoid having their food stolen, they recache the food. So it seems that these birds can even also have some concepts of other minds.

A second objection has been called the “problem of the rock” (Stubenberg 1998) and is originally due to Alvin Goldman (1993). When I think about a rock, it is obviously not true that the rock becomes conscious. So why should I suppose that a mental state becomes conscious when I think about it? This objection forces HOT theorists to explain just how adding a HOT changes an unconscious state into a conscious one. There have been, however, a number of responses to this kind of objection (Rosenthal 1997; Van Gulick 2000, 2004; Gennaro 2005, 2012, ch. 4). A common theme is that there is a principled difference in the *objects* of the thoughts in question. For one thing, rocks and similar objects are not mental states in the first place and so HOT theorists are trying to explain how a *mental state* becomes conscious.

Third, the above sometimes leads to an objection akin to Chalmers’ (1995) “hard problem.” It might be asked just how exactly any HOR theory really explains the subjective or phenomenal aspect of conscious experience. How or why does a mental state come to have a first-person qualitative “what it is like” aspect by virtue of a HOR directed at it? A number of overlapping

responses have emerged in recent years. Some argue that this objection misconstrues the more modest purpose of (at least, their) HOT theories. The claim is that HOT theories are theories of consciousness only in the sense that they are attempting to explain what differentiates conscious from unconscious states, that is, in terms of a higher-order awareness of some kind. A full account of “qualitative properties” or “sensory qualities” (which can themselves be unconscious) can be found elsewhere in their work and is independent of their theory of consciousness (Rosenthal 1991; Lycan 1996). Thus, a full explanation of phenomenal consciousness does require more than a HOR theory, but that is no objection to it as such. It may also be that proponents of the hard problem unjustly raise the bar as to what would count as a viable explanation of consciousness, so that any reductionist attempt would inevitably fall short (Carruthers 2000).

My own response to how HOTs explain conscious states has more to do with the rather Kantian idea that the concepts that figure into the HOTs are necessarily presupposed in conscious experience (Gennaro 2012, ch. 4; 2005). The basic idea is that first we receive information via our senses or the “faculty of sensibility.” Some of this information will then rise to the level of unconscious mental states but these mental states do not become conscious until the more cognitive “faculty of understanding” operates on them via the application of concepts. We can arguably understand this concept application in terms of HOTs directed at first-order states. Thus, I consciously experience (and recognize) the red barn *as a red barn* partly because I apply the concepts “red” and “barn” (in my HOTs) to my basic perceptual states. If there is a real hard problem, it may have more to do with explaining concept acquisition and application (Gennaro 2012, chs. 6 and 7). It is important to notice, however, that this kind of solution is unlike reductionist accounts in neurophysiological terms and so is immune to Chalmers’ main criticism of those theories. For example, there is no problem about how a specific brain activity “produces” conscious experience, nor is there an issue about any allegedly mysterious *a priori* or *a posteriori* connection between brains and consciousness. The issue instead is how HOT theory is realized in our brains.

A fourth and very important objection to HO approaches is the question of how any of these theories can explain cases where the HO state might *misrepresent* the LO mental state (Byrne 1997; Neander 1998; Levine 2001; Block 2011). After all, if we have a representational relation between two states, it seems possible for misrepresentation or malfunction to occur. If it does, then what explanation can be given by the HOT theorist? If my LO state registers a *red* percept and my HO state registers a thought about something *green* due to some odd neural misfiring, then what happens? It seems that problems loom for any answer given by a HOT theorist. For example, if a HOT theorist takes the option that the resulting conscious experience is reddish, then it seems that the HOT plays no role in determining the qualitative character of the experience. On the other hand, if the resulting experience is greenish, then the LO state seems irrelevant. Rosenthal and Weisberg hold that the HO state determines the qualitative properties even when there is no LO state at all, which are called “targetless” or “empty” HOT cases (Rosenthal 2005, 2011; Weisberg 2008, 2011).<sup>5</sup>

My own view is that no conscious experience results in the above cases because it is difficult to see how, even according to HOT theory, a sole unconscious HOT can result in a conscious state (Gennaro 2012, 2013). I think that there must be a conceptual match, complete or partial, between the LO and HO state in order for a conscious state to exist in the first place. Weisberg and Rosenthal argue that what really matters is how things seem to the subject and, if we can explain that, we’ve explained all that we need to. But somehow the HOT *alone* is now all that matters. Doesn’t this defeat the very purpose of HOT theory, which is supposed to explain a conscious mental state in terms of the *relation* between *two states*? Moreover, HOT theory is supposed to be a theory of first-order state consciousness, that is, the *lower-order state* is supposed



to be the conscious one. So, I hold that misrepresentations cannot occur between M and HOT and still result in a conscious state (Gennaro 2012, 2013).<sup>6</sup>

Let us return briefly to the claim that HOT theory can help to explain how one's conceptual repertoire can transform our phenomenological experience. Concepts, at minimum, involve recognizing and understanding objects and properties. Having a concept C should also give the concept possessor the ability to discriminate instances of C and non-Cs. For example, if I have the concept 'tiger' I should be able to identify tigers and distinguish them from other even fairly similar land animals. Rosenthal invokes the idea that concepts can change one's conscious experience with the help of several nice examples (2005: 187–188). For example, acquiring various concepts from a wine-tasting course will lead to different experiences from those enjoyed before the course. I acquire more fine-grained wine-related concepts, such as “dry” and “heavy,” which in turn can figure into my HOTs and thus alter my conscious experiences. As is widely held, I will literally have different qualia due to the change in my conceptual repertoire. As we acquire more concepts, we have more fine-grained experiences and thus we experience more qualitative complexities. A botanist will likely have somewhat different perceptual experiences than I do when we are walking through a forest. Conversely, those with a more limited conceptual repertoire, such as infants and animals, will have a more coarse-grained set of experiences.<sup>7</sup>

## 5 Dispositional HOT Theory

Carruthers (2000) thinks that it is better to treat HOTs as dispositional states instead of the standard view that the HOTs are actual, though he also understands his “dispositional HOT theory” to be a form of HOP theory (Carruthers 2004). The basic idea is that the consciousness of an experience is due to its *availability* to HOT. So, “conscious experience occurs when perceptual contents are fed into a special short-term buffer memory store, whose function is to make those contents available to cause HOTs about themselves” (Carruthers 2000: 228). Some first-order perceptual contents are available to a higher-order “theory of mind mechanism,” which transforms those representational contents into conscious contents. Thus, no actual HOT occurs. Instead, according to Carruthers, some perceptual states acquire a dual intentional content; for example, a conscious experience of yellow not only has a first-order content of “yellow,” but also has the higher-order content “seems yellow” or “experience of yellow.” Thus, he calls his theory “dual-content theory.” Carruthers makes interesting use of so-called “consumer semantics” in order to fill out his theory of phenomenal consciousness. The content of a mental state depends, in part, on the powers of the organisms who “consume” that state, for example, the kinds of inferences the organism can make when it is in that state.

Carruthers' dispositional theory is criticized by those who, among other things, do not see how the mere disposition toward a mental state can render it conscious (Rosenthal 2004; Gennaro 2004b, 2012). Recall that a key motivation for HOT theory is the TP. But the TP clearly lends itself to an *actualist* HOT theory interpretation, namely, that we *are* aware of our conscious states and not aware of our unconscious states. As Rosenthal puts it, “being disposed to have a thought about something doesn't make one conscious of that thing, but only potentially conscious of it” (2004: 28). Thus it is natural to wonder just how dispositional HOT theory *explains* phenomenal consciousness, that is, how a *dispositional* HOT can render a mental state *actually* conscious.

Carruthers is, to be fair, well aware of this objection and attempts to address it in some places (such as Carruthers 2005: 55–60). He again relies on consumer semantics in an attempt to show that changes in consumer systems can transform perceptual contents. But one central problem arguably remains: dual-content theory appears vulnerable to the same objection raised

by Carruthers against FOR. On both views, it is difficult to understand how the functional or dispositional aspects of the respective theories can yield actual conscious states (Jehle and Kriegel 2006).

## 6 Higher-Order Perception (HOP) Theory

David Armstrong (1968, 1981) and William Lycan (1996, 2004) have been the leading HOP theorists in recent years. Unlike HOTs, HOPs are not thoughts and can have at least some non-conceptual content. HOPs are understood as analogous to outer perception. One standard objection to HOP theory, however, is that, unlike outer perception, there is no distinct sense organ or scanning mechanism responsible for HOPs. Similarly, no distinctive sensory quality or phenomenology is involved in having HOPs whereas outer perception always involves some sensory quality. Lycan concedes the disanalogy but argues that it does not outweigh other considerations favoring HOP theory (Lycan 1996: 28–29; 2004: 100). Lycan’s reply might be understandable but the objection remains a serious one nonetheless. After all, this represents a major difference between normal outer perception and any alleged inner perception.

Lycan (2004: 101–110) presents several reasons to prefer HOP theory to HOT theory. For example, he urges that consciousness, and especially active introspection, of our mental states is much more like perception than thought because perception allows for a greater degree of voluntary control over what areas of our phenomenal field to make conscious. But one might argue against Lycan’s claim that HOP theory is superior to HOT theory by pointing out that there is an important *nonvoluntary* or *passive* aspect to perception not found in thought (Gennaro 2012, ch. 3). The perceptions in HOPs are too passive to account for the dynamic interaction between HORs and first-order states. While it is true that many thoughts do occur nonvoluntarily and somewhat spontaneously, introspective thoughts (i.e. conscious HOTs) can be controlled voluntarily at least as well as conscious HOPs. We often actively search our minds for information, memories, and other mental items. In any case, what ultimately justifies treating HORs as thoughts is the application of concepts to first-order states (Gennaro 1996: 101; 2012, ch. 4).

Lycan has actually recently changed his mind and no longer holds HOP theory, mainly because he thinks that *attention* to first-order states is sufficient for an account of conscious states and there is little reason to view the relevant attentional mechanism as *intentional* or as *representing* first-order states (Sauret and Lycan 2014). Armstrong and Lycan had indeed previously often spoken of HOP “monitors” or “scanners” as a kind of attentional mechanism but now it seems that “...leading contemporary cognitive and neurological theories of attention are unanimous in suggesting that attention is not intentional” (Sauret and Lycan 2014: 365). They cite Prinz (2012), for example, who holds that attention is a psychological process that connects first-order states with working memory. Sauret and Lycan explain that “attention is the mechanism that enables subjects to become aware of their mental states” (2014: 367) and yet this “awareness of” is a non-intentional selection of mental states. Thus, Sauret and Lycan (2014) find that Lycan’s (2001) argument, discussed above, goes wrong at premise 2, namely, that the “of” mentioned in premise 1 is perhaps more of an “acquaintance relation,” which is non-intentional. Unfortunately, Sauret and Lycan do not present a worked out theory of acquaintance and it is doubtful that the acquaintance strategy is a better alternative (see Gennaro 2015). Such acquaintance relations would presumably be understood as somehow “closer” than the representational relation. But this strategy is at best trading one difficult problem for an even deeper puzzle, namely, just how to understand the allegedly intimate and non-representational “awareness of” relation between HORs and first-order states. It is also more difficult to understand such “acquaintance relations” in the context of a reductionist approach. Indeed, acquaintance is often taken to be unanalyzable

and simple, in which case it is difficult to see how it could explain anything, let alone the nature of conscious states.

## 7 Hybrid and Self-Representational Accounts

A final cluster of representationalist views holds that the HOR in question should be understood as *intrinsic* to an overall complex conscious state. This is in contrast to the standard view that the HOR is *extrinsic* to (that is, entirely distinct from) its target mental state. Rosenthal's view about the extrinsic nature of the HOR has come under attack in recent years and thus various hybrid representational theories can be found in the literature. One motivation for this trend is some dissatisfaction with standard HOR theory's ability to handle some of the objections addressed above. Another reason is renewed interest in a view somewhat closer to the one held by Franz Brentano (1874/1973) and others, normally associated with the phenomenological tradition (Husserl 1913/1931; Sartre 1956; Smith 2004; Textor 2006). To varying degrees, these theories have in common the idea that conscious mental states, in some sense, represent *themselves*. Conscious states still involve having a thought about a mental state but just not a distinct mental state. Thus, when one has a conscious desire for a beer, one is also aware that one is in that very state. The conscious desire both represents the beer and itself. It is this "self-representing" that makes the state conscious and is the distinguishing feature of such states.

These theories are known by various names. For example, my own view is actually that, when one has a first-order conscious state, the (unconscious) HOT is better viewed as intrinsic to the target state, so that we have a complex conscious state with parts (Gennaro 1996, 2006, 2012). I call this the "wide intrinsicity view" (WIV) and argue, for example, that Jean-Paul Sartre's theory of consciousness can also be understood in this way (Gennaro 2002, 2015). On the WIV, first-order conscious states are complex states with a world-directed part and a meta-psychological component. Conscious mental states can be understood as brain states, which are combinations of passively received perceptual input and presupposed higher-order conceptual activity directed at that input. Robert Van Gulick (2004, 2006) has also explored the related alternative that the higher-order state is part of an overall global conscious state. He calls these states "HOGS" (Higher-Order Global States) where a lower-order unconscious state is "recruited" into a larger state, which becomes conscious, partly due to the "implicit self-awareness" that one is in the lower-order state.

This approach is also forcefully advocated by Uriah Kriegel in a series of papers (beginning with Kriegel [2003] and culminating in Kriegel [2009]). He calls it the "self-representational theory of consciousness." To be sure, the notion of a mental state representing itself or a mental state with one part representing another part is in need of further explanation. Nonetheless, there is agreement among these authors that conscious mental states are, in some important sense, reflexive or self-directed.

Kriegel (2006, 2009) interprets TP in terms of a ubiquitous (conscious) "peripheral" self-awareness (or "mine-ness"), which accompanies all of our first-order focal conscious states. Not all conscious "directedness" is attentive and so we should not restrict conscious directedness to that which we are consciously focused on. If this is right, then a first-order conscious state can be both attentively outer-directed and inattentively inner-directed. Still, there are problems with this approach. For example, although it is true that there are degrees of conscious attention, the clearest example of genuine "inattentive" consciousness is outer-directed awareness in one's peripheral visual field. But this obviously does not show that any such inattentive consciousness is *self-directed* when there is outer-directed consciousness, let alone at the very same time. Also, what is the evidence for such self-directed inattentive consciousness? It is presumably

based on phenomenological considerations, but, for what it's worth, I have to confess that I do not find such ubiquitous inattentive self-directed "consciousness" in my first-order experience. It does not seem to me that I am consciously aware (in any sense) of my own *experience* when I am, say, consciously attending to a movie or putting together a bookcase. Even some who are otherwise very sympathetic to Kriegel's phenomenological approach find it difficult to believe that "pre-reflective" (inattentive) self-awareness always accompanies conscious states (Siewart 1998; Zahavi 2004; Smith 2004). None of these authors are otherwise sympathetic to HOT theory or reductionist approaches to consciousness.<sup>8</sup>

## 8 HOT Theory and the Brain

One interesting recent area of emphasis has been on how HOR and self-representationalism might be realized in the brain. After all, most representationalists think that their accounts of the structure of conscious states are realized in the brain (even if it will take some time to identify all the neural structures). To take one question: do conscious mental states require widespread brain activation, or can at least some be fairly localized in narrower areas of the brain? Perhaps most interesting is whether or not the prefrontal cortex (PFC) is required for having conscious states (Gennaro 2012, ch. 9). Kriegel (2007; 2009, ch. 7) and Block (2007) argue that, according to the higher-order and self-representational view, the PFC is required for most conscious states. But even though it is very likely true that the PFC is required for the more sophisticated *introspective* states (or conscious HOTs), this would not be a problem for HOT theory because it doesn't require introspection for first-order conscious states (Gennaro 2012, ch. 9).

Is there evidence of conscious states without PFC activity? Yes. For example, Rafael Malach and colleagues show that when subjects are engaged in a perceptual task, such as absorbed in watching a movie, there is widespread neural activation but little PFC activity (Grill-Spector and Malach 2004; Goldberg, Harel, and Malach 2006). Although some other studies do show PFC activation, this is mainly because subjects are asked to *report* their experiences. Also, basic conscious experience is not decreased entirely even when there is extensive bilateral PFC damage or lobotomies (Pollen 2003). It seems that this is also an advantage for HOT theory with regard to the problem of animal and infant consciousness. If another theory *requires* PFC activity for *all* conscious states and HOT theory does not, then HOT theory is in a better position to account for animal and infant consciousness, since it is doubtful that infants and most animals have the requisite PFC activity.

One might still ask: Why think that unconscious HOTs can occur outside the PFC? If we grant that unconscious HOTs can be regarded as a kind of "pre-reflective" self-consciousness, then we might for example look to Newen and Vogeley (2003) for some answers. They distinguish five levels of self-consciousness from "phenomenal self-acquaintance" and "conceptual self-consciousness" up to "iterative meta-representational self-consciousness." The majority of their discussion is explicitly about the neural correlates of what they call the "first-person perspective." Citing numerous experiments, they point to various "neural signatures" of self-consciousness. The PFC is rarely mentioned and then usually only with regard to more sophisticated forms of self-consciousness. Other brain areas are much more prominently identified, such as the medial and inferior parietal cortices, the temporoparietal cortex, and the anterior cingulate cortex and the posterior cingulate cortex.<sup>9</sup>

## 9 Brief Summary

The primary focus of the chapter is on representational theories of consciousness, which attempt to reduce consciousness to mental representations rather than directly to neural states. Examples

of this popular approach are first-order representationalism (FOR), which attempts to explain conscious experience primarily in terms of world-directed (or first-order) intentional states, and higher-order representationalism (HOR), which holds that what makes a mental state *M* conscious is that it is the object of some kind of HOR directed at *M*. Objections to each view were raised and some responses were offered. In addition, some hybrid and self-representational approaches were also critically discussed. The overall question that should be answered by any of these theories is: What makes a mental state a conscious mental state?

### Notes

- 1 Some related literature along these lines has been growing quickly with frequent reference to “phenomenal intentionality” (Kriegel 2013) and “cognitive phenomenology” (Bayne and Montague 2011; Chudnoff 2015). For my own take on this issue, see Gennaro (2012, ch. 2).
- 2 For a more recent exchange on the representational content of moods, see Kind (2014) and Mandelovici (2014).
- 3 For other versions of FOR, see Kirk (1994), Byrne (2001), and Droege (2003). See Chalmers (2004) for an excellent discussion of the dizzying array of possible representationalist positions.
- 4 See Carruthers (2000, 2005, 2008) and Gennaro (2004b, 2009, 2012, chs. 7 and 8).
- 5 For some other variations on HOT theory, see Rolls (2004), Picciuto (2011), and Coleman (2015).
- 6 In the end, I argue for the much more nuanced claim that “Whenever a subject *S* has a HOT directed at experience *e*, the content *c* of *S*’s HOT determines the way that *S* experiences *e* (provided that there is a *full* or *partial* conceptual match with the lower-order state, or when the HO state contains more specific or fine-grained concepts than the LO state has, or when the LO state contains more specific or fine-grained concepts than the HO state has, or when the HO concepts can combine to match the LO concept)” (Gennaro 2012: 180). The reasons for these qualifications are discussed at length in Gennaro (2012, ch. 6).
- 7 In Gennaro (2012, ch. 6), I argue that there is a very close and natural connection between HOT theory and conceptualism. Chuard (2007) defines conceptualism as the claim that “the representational content of a perceptual experience is fully conceptual in the sense that what the experience represents (and how it represents it) is entirely determined by the conceptual capacities the perceiver brings to bear in her experience” (Chuard 2007: 25).
- 8 For others who hold some form of the self-representationalism, see Williford (2006) and Janzen (2008). Some authors (such as Gennaro [2012]) view their hybrid position to be a modified version of HOT theory and Rosenthal (2004) has called it “intrinsic higher-order theory.” I have argued against Kriegel’s view at length in Gennaro (2008) and Gennaro (2012, ch. 5).
- 9 See Kozuch (2014) for a nice discussion of the PFC in relation to higher-order theories.

### References

- Armstrong, D. (1968) *A Materialist Theory of Mind*, London: Routledge and Kegan Paul.
- Armstrong, D. (1981) “What Is Consciousness?” In *The Nature of Mind*, Ithaca, NY: Cornell University Press.
- Bayne, T., and Montague, M. (eds.) (2011) *Cognitive Phenomenology*, New York: Oxford University Press.
- Block, N. (1996) “Mental Paint and Mental Latex,” *Philosophical Issues* 7: 19–49.
- Block, N. (2007) “Consciousness, Accessibility, and the Mesh between Psychology and Neuroscience,” *Behavioral and Brain Sciences* 30: 481–499.
- Block, N. (2011) “The Higher Order Approach to Consciousness Is Defunct,” *Analysis* 71: 419–431.
- Brentano, F. (1874/1973) *Psychology From an Empirical Standpoint*, New York: Humanities.
- Byrne, A. (1997) “Some Like It HOT: Consciousness and Higher-Order Thoughts,” *Philosophical Studies* 86: 103–129.
- Byrne, A. (2001) “Intentionalism Defended,” *Philosophical Review* 110: 199–240.
- Carruthers, P. (1989) “Brute Experience,” *Journal of Philosophy* 86: 258–269.
- Carruthers, P. (2000) *Phenomenal Consciousness*, Cambridge: Cambridge University Press.
- Carruthers, P. (2004) “HOP over FOR, HOT Theory,” In Gennaro (2004a).

- Carruthers, P. (2005) *Consciousness: Essays from a Higher-Order Perspective*, New York: Oxford University Press.
- Carruthers, P. (2008) "Meta-Cognition in Animals: A Skeptical Look," *Mind and Language* 23: 58–89.
- Chalmers, D. (1995) "Facing Up to the Problem of Consciousness," *Journal of Consciousness Studies* 2: 200–219.
- Chalmers, D. (ed.) (2002) *Philosophy of Mind: Classical and Contemporary Readings*, New York: Oxford University Press.
- Chuard, P. (2007) "The Riches of Experience," In R. Gennaro (ed.) *The Interplay Between Consciousness and Concepts*, Exeter, UK: Imprint Academic. (This is also a special double issue of the *Journal of Consciousness Studies* 14 (9–10).)
- Chudnoff, E. (2015) *Cognitive Phenomenology*, New York: Routledge.
- Clayton, N., Bussey, T., and Dickinson, A. (2003) "Can Animals Recall the Past and Plan for the Future?" *Nature Reviews Neuroscience* 4: 685–691.
- Clayton, N., Emery, N., and Dickinson, A. (2006) "The Rationality of Animal Memory: Complex Caching Strategies of Western Scrub Jays," In S. Hurley and M. Nudds (eds.) *Rational Animals?* New York: Oxford University Press.
- Coleman, S. (2015) "Quotational Higher-Order Thought Theory," *Philosophical Studies* 172: 2705–2733.
- Dretske, F. (1995) *Naturalizing the Mind*, Cambridge, MA: MIT Press.
- Droege, P. (2003) *Caging the Beast*, Philadelphia and Amsterdam: John Benjamins Publishers.
- Emery, N., and Clayton, N. (2001) "Effects of Experience and Social Context on Prospective Caching Strategies in Scrub Jays," *Nature* 414: 443–446.
- Gennaro, R. (1993) "Brute Experience and the Higher-Order Thought Theory of Consciousness," *Philosophical Papers* 22: 51–69.
- Gennaro, R. (1995) "Does Mentality Entail Consciousness?" *Philosophia* 24: 331–358.
- Gennaro, R. (1996) *Consciousness and Self-Consciousness: A Defense of the Higher-Order Thought Theory of Consciousness*, Amsterdam and Philadelphia: John Benjamins.
- Gennaro, R. (2002) "Jean-Paul Sartre and the HOT Theory of Consciousness," *Canadian Journal of Philosophy* 32: 293–330.
- Gennaro, R. (ed.) (2004a) *Higher-Order Theories of Consciousness: An Anthology*, Amsterdam and Philadelphia: John Benjamins.
- Gennaro, R. (2004b) "Higher-Order Thoughts, Animal Consciousness, and Misrepresentation: A Reply to Carruthers and Levine," In Gennaro (2004a).
- Gennaro, R. (2005) "The HOT Theory of Consciousness: Between a Rock and a Hard Place?" *Journal of Consciousness Studies* 12 (2): 3–21.
- Gennaro, R. (2006) "Between Pure Self-Referentialism and the (Extrinsic) HOT Theory of Consciousness," In U. Kriegel and K. Williford (2006).
- Gennaro, R. (2008) "Representationalism, Peripheral Awareness, and the Transparency of Experience," *Philosophical Studies* 139: 39–56.
- Gennaro, R. (2009) "Animals, Consciousness, and I-thoughts," In R. Lurz (ed.) *Philosophy of Animal Minds*, New York: Cambridge University Press.
- Gennaro, R. (2012) *The Consciousness Paradox: Consciousness, Concepts, and Higher-Order Thoughts*, Cambridge, MA: The MIT Press.
- Gennaro, R. (2013) "Defending HOT Theory and the Wide Intrinsicity View: A Reply to Weisberg, Van Gulick, and Seager," *Journal of Consciousness Studies* 20 (11–12): 82–100.
- Gennaro, R. (2015) "The 'of' of Intentionality and the 'of' of Acquaintance," In S. Miguens, G. Preyer, and C. Morando (eds.) *Pre-Reflective Consciousness: Sartre and Contemporary Philosophy of Mind*, New York: Routledge Publishers.
- Goldberg, I., Harel, M., and Malach, R. (2006) "When the Brain Loses Its Self: Prefrontal Inactivation during Sensorimotor Processing," *Neuron* 50: 329–339.
- Goldman, A. (1993) "Consciousness, Folk Psychology and Cognitive Science," *Consciousness and Cognition* 2: 264–282.
- Grill-Spector, K. and Malach, R. (2004) "The Human Visual Cortex," *Annual Review of Neuroscience* 7: 649–677.
- Gunther, Y. (ed.) (2003) *Essays on Nonconceptual Content*, Cambridge, MA: MIT Press.
- Harman, G. (1990) "The Intrinsic Quality of Experience," In J. Tomberlin (ed.) *Philosophical Perspectives*, 4, Atascadero, CA: Ridgeview Publishing.

- Horgan, T., and Tienson, J. (2002) "The Intentionality of Phenomenology and the Phenomenology of Intentionality," In Chalmers (2002).
- Husserl, E. (1913/1931) *Ideas: General Introduction to Pure Phenomenology (Ideen au einer reinen Phänomenologie und phänomenologischen Philosophie*, Translated by W. Boyce Gibson, New York: MacMillan.
- Janzen, G. (2008) *The Reflexive Nature of Consciousness*, Amsterdam and Philadelphia: John Benjamins.
- Jehle, D. and Kriegel, U. (2006) "An Argument Against Dispositional HOT Theory," *Philosophical Psychology* 19: 462–476.
- Kind, A. (2003) "What's so Transparent about Transparency?" *Philosophical Studies* 115: 225–244.
- Kind, A. (2014) "The Case Against Representationalism About Moods," In U. Kriegel (ed.) *Current Controversies in Philosophy of Mind*, New York: Routledge Press.
- Kirk, R. (1994) *Raw Feeling*, New York: Oxford University Press.
- Kozuch, B. (2014) "Prefrontal Lesion Evidence Against Higher-Order Theories of Consciousness," *Philosophical Studies* 167: 721–746.
- Kriegel, U. (2002) "PANIC Theory and the Prospects for a Representational Theory of Phenomenal Consciousness," *Philosophical Psychology* 15: 55–64.
- Kriegel, U. (2003) "Consciousness as Intransitive Self-Consciousness: Two Views and an Argument," *Canadian Journal of Philosophy* 33: 103–132.
- Kriegel, U. (2006) "The Same Order Monitoring Theory of Consciousness," In U. Kriegel and K. Williford (2006).
- Kriegel, U. (2007) "A Cross-Order Integration Hypothesis for the Neural Correlate of Consciousness," *Consciousness and Cognition* 16: 897–912.
- Kriegel, U. (2009) *Subjective Consciousness*, New York: Oxford University Press.
- Kriegel, U. (2013) *Phenomenal Intentionality*, New York: Oxford University Press.
- Levine, J. (2001) *Purple Haze: The Puzzle of Conscious Experience*, Cambridge, MA: MIT Press.
- Lycan, W. (1996) *Consciousness and Experience*, Cambridge, MA: MIT Press.
- Lycan, W. (2001) "A Simple Argument for a Higher-Order Representation Theory of Consciousness," *Analysis* 61: 3–4.
- Lycan, W. (2004) "The superiority of HOP to HOT," In R. Gennaro (ed.) *Higher-Order Theories of Consciousness: An Anthology*, Amsterdam: John Benjamins.
- Mandelovici, A. (2014) "Pure Intentionalism about Moods and Emotions," In U. Kriegel (ed.) *Current Controversies in Philosophy of Mind*, New York: Routledge Press.
- Moore, G. E. (1903) "The Refutation of Idealism," In G. E. Moore (ed.) *Philosophical Studies*, Totowa, NJ: Littlefield, Adams, and Company.
- Neander, K. (1998) "The Division of Phenomenal Labor: A Problem for Representational Theories of Consciousness," *Philosophical Perspectives* 12: 411–434.
- Newen, A. and Vogeley, K. (2003) "Self-Representation: Searching for a Neural Signature of Self-Consciousness," *Consciousness and Cognition* 12: 529–543.
- Picciuto, V. (2011) "Addressing Higher-Order Misrepresentation with Quotational Thought," *Journal of Consciousness Studies* 18 (3–4): 109–136.
- Pitt, D. (2004) "The Phenomenology of Cognition, Or, What Is It Like to Think That P?" *Philosophy and Phenomenological Research* 69:1–36.
- Pollen, D. (2003) "Explicit Neural Representations, Recursive Neural Networks and Conscious Visual Perception," *Cerebral Cortex* 13: 807–814.
- Prinz, J. (2012) *The Conscious Brain*, New York: Oxford University Press.
- Rolls, E. (2004) "A Higher Order Syntactic Thought (HOST) Theory of Consciousness," In Gennaro (2004a).
- Rosenthal, D.M. (1986) "Two Concepts of Consciousness," *Philosophical Studies* 49: 329–359.
- Rosenthal, D.M. (1991) "The Independence of Consciousness and Sensory Quality," *Philosophical Issues* 1: 15–36.
- Rosenthal, D.M. (1997) "A Theory of Consciousness," In N. Block, O. Flanagan, and G. Güzelidere (eds.) *The Nature of Consciousness*, Cambridge, MA: MIT Press.
- Rosenthal, D.M. (2002) "Explaining Consciousness," In D. Chalmers (ed.) *Philosophy of Mind: Classical and Contemporary Readings*, New York: Oxford University Press.
- Rosenthal, D.M. (2004) "Varieties of Higher-Order Theory," In R. Gennaro (ed.) *Higher-Order Theories of Consciousness: An Anthology*, Amsterdam and Philadelphia: John Benjamins.
- Rosenthal, D.M. (2005) *Consciousness and Mind*, New York: Oxford University Press.
- Rosenthal, D.M. (2011) "Exaggerated Reports: Reply to Block," *Analysis* 71: 431–437.

- Sartre, J. (1956) *Being and Nothingness*, New York: Philosophical Library.
- Sauret, W., and Lycan, W. (2014) "Attention and Internal Monitoring: A Farewell to HOP," *Analysis* 74: 363–370.
- Seager, W. (2004) "A Cold Look at HOT Theory," In R. Gennaro (ed.) *Higher-Order Theories of Consciousness: An Anthology*, Philadelphia and Amsterdam: John Benjamins.
- Searle, J. (1992) *The Rediscovery of the Mind*, Cambridge, MA: MIT Press.
- Siewart, C. (1998) *The Significance of Consciousness*, Princeton: Princeton University Press.
- Smith, D.W. (2004) *Mind World: Essays in Phenomenology and Ontology*, Cambridge, MA: Cambridge University Press.
- Stubenberg, L. (1998) *Consciousness and Qualia*, Philadelphia and Amsterdam: John Benjamins Publishers.
- Textor, M. (2006) "Brentano (and Some Neo-Brentanians) on Inner Consciousness," *Dialectica* 60: 411–432.
- Tye, M. (1995) *Ten Problems of Consciousness*, Cambridge, MA: MIT Press.
- Tye, M. (2000) *Consciousness, Color, and Content*, Cambridge, MA: MIT Press.
- Van Gulick, R. (2004) "Higher-Order Global States (HOGS): An Alternative Higher-Order Model of Consciousness," In R. Gennaro (ed.) *Higher-Order Theories of Consciousness: An Anthology*, Amsterdam and Philadelphia: John Benjamins.
- Van Gulick, R. (2006) "Mirror Mirror—Is That All?" In U. Kriegel and K. Williford (2006).
- Weisberg, J. (2008) "Same Old, Same Old: The Same-Order Representation Theory of Consciousness and the Division of Phenomenal Labor," *Synthese* 160: 161–181.
- Weisberg, J. (2011) "Misrepresenting Consciousness," *Philosophical Studies* 154: 409–433.
- Williford, K. (2006) "The Self-Representational Structure of Consciousness," In Kriegel and Williford (2006).
- Zahavi, D. (2004) "Back to Brentano?" *Journal of Consciousness Studies* 11 (10–11): 66–87.

### **Related Topics**

Materialism  
Consciousness in Western Philosophy  
Consciousness and Intentionality  
Consciousness and Conceptualism  
Consciousness and Attention  
Animal Consciousness