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Concepts and Definitions of Consciousness

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Introduction

p0005 The term 'consciousness' is used in several ways: to describe a person or other creature as being awake and sentient, to describe a person or other creature as being 'aware of' something, and to refer to a property of mental states, such as perceiving, feeling, and thinking, that distinguishes those states from unconscious mental states. Distinguishing these different concepts of consciousness is crucial in evaluating the major theories of what it is for a state to be conscious. Among those are first-order theories, on which a mental state is conscious if being in that state results in one's being conscious of something; global-workspace theories, on which a state is conscious if it's widely available for mental processing; inner-sense theories, on which a state is conscious if one senses or perceives that state by way of a special inner faculty; and higher-order-thought theories, on which a state is conscious if one is aware of that state by having a thought about it. We will consider the advantages and shortcomings of these theories and variants of them.

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Concepts of Consciousness (I)

p0010 The ubiquity of consciousness in human life and mental functioning makes it easy to overlook that the term 'consciousness' is used for three distinct phenomena. Though related in various ways, these phenomena are different, and distinguishing them is important both conceptually and theoretically.

p0015 The term 'conscious' is used most frequently to refer to the condition of people and other creatures when they are awake and responsive to sensory stimulation. A creature lacks consciousness in this first sense when it is asleep, anaesthetized, in a coma, and so forth. The main concern with this kind of consciousness is to explain in biological terms the difference between creatures' conscious and unconscious conditions. Important progress has been made on that front, for example, by Giulio Tononi and colleagues and by Steven Laureys. Because consciousness of this sort is a property of creatures, it is convenient to refer to it as creature consciousness.

p0020 A second important phenomenon we call consciousness is a creature's being conscious, or aware, of something. There are two ways creatures are conscious of things. A person or other animal is conscious of an object by seeing, hearing, or touching it, or sensing it in some other way. But one is also conscious of something, even without sensing that thing, if one has a thought about it as being present to one, that is, a thought that represents that thing as being in one's immediate environment. Because we describe this phenomenon by reference to a grammatical object, we may call it transitive consciousness. Explaining transitive consciousness consists in explaining what it is for a thought to be about something and what it is for a perception or sensation to be of something.

p0025 A third phenomenon is more controversial in nature, and is the subject of much recent scientific and philosophical literature. We are conscious of various things in virtue of our having perceptions of them or thoughts about them. But those perceptions and thoughts can themselves be conscious or not conscious. Subliminal perception is an example of nonconscious perceiving, and it is widely accepted that many thoughts occur nonconsciously as well, that is, outside our stream of consciousness. Since this phenomenon is a property of mental states, rather than of creatures that are in those states, it is convenient to call it state consciousness.

p0030 Mental states, such as thoughts, perceptions, and feelings, were until the latter part of the nineteenth century seldom described as being conscious or not conscious. Theorists before that time tended to regard mental states as invariably conscious; so it was idle to mark a distinction between mental states that are conscious and

those that are not. Thus Descartes held that "we cannot have any thought of which we are not aware at the very moment when it is in us" (Fourth Replies), echoing Aristotle's claim in that "if we perceive, we perceive that we perceive, and if we think, that we think" (*Nichomachean Ethics* 1170a32).

p0035 Brentano, whose University of Vienna lectures Freud attended for a time, maintained as late as 1874 that all mental states are conscious. Still, he broke ranks with previous tradition in his *Psychology from an Empirical Standpoint* by denying that there is any contradiction in the notion of a mental state that is not conscious, thereby opening the door to the possibility that mental states might after all sometimes not be conscious.

p0040 As long as consciousness was widely thought to be essential to mentality, little attention was given to explaining why that is so, or even to explaining what it is for states to be conscious. Brentano's breakthrough, very likely noted by Freud, was to focus attention on those questions. And Brentano himself offered an explanation both of what it is for states to be conscious and of why, as he held, all mental states are conscious.

p0045 Theoretical discussions of consciousness often fail to be clear which of these three phenomena are at issue. This is sometimes innocuous, but running these phenomena together also sometimes causes theoretical difficulty. Thus conflating creature consciousness with the consciousness of mental states may lead one to hold that the mental states a creature is in when that creature is conscious are themselves all conscious states. But, since mental states occur without being conscious, we have no reason to think that all the mental states a conscious creature is in are conscious states. Perhaps, indeed, the mental states of some creatures, such as lizards and frogs, are never conscious, even when those creatures are conscious; other creatures might only sometimes be conscious without any of their mental states being conscious. A creature's being conscious does not by itself show that its mental states are conscious.

s0015 Concepts of Consciousness (II)

p0050 Mental states have two characteristic types of mental property. One is intentional content, which represents things in a way that can be expressed by a full sentence. States with intentional content also have mental attitude that one holds toward that content, such as mental affirmation, doubt, wonder, and so forth. In contrast with those intentional properties, there are various mental qualities, which are characteristic of bodily and perceptual sensations. Each mental quality has a particular location in a quality space that is characteristic of the relevant sensory modality, effect, a quality space of mental colors, sounds, and the like; this account has been developed by Clark and by Rosenthal. Some states, such as perceptions and emotions, have both intentional and qualitative properties; the mental properties of other states, such as thoughts and sensations, are of only one of the two types.

p0055 When a state with qualitative character is conscious, there is, as Thomas Nagel has put it, something it's like for one to be in that state. By contrast, we do not typically say that there is something it's like for one consciously to think some particular thing, or to doubt it, though some have contested that. The consciousness of purely intentional states is in any case intuitively distinct from that of states that have some qualitative character.

p0060 Pressing in part on that intuitive difference, Block has distinguished two ways in which states can be conscious. A state is access conscious if its content is "poised to be used as a premise in reasoning,... [and] for [the] *rational* control of action and... speech". By contrast, a state exhibits phenomenal consciousness if there is something it's like to be in that state. In part because qualitative consciousness seemingly differs from the consciousness of nonqualitative states, Block's distinction has been influential both in the philosophical and in the scientific literature.

p0065 Block regards these two types of state consciousness as conceptually independent; access and phenomenal consciousness reflect two distinct concepts of state consciousness. Block has more recently argued in addition that the two occur independently and have distinct neural realizations. If so, distinct theoretical treatments are required for the two.

p0070 The notion of access consciousness plays a central role in so-called global-workspace theories, developed by Baars, Dehaene and Naccache, and Tononi, on which a state is conscious if it has the

potential for having a global effect on memory, behavior, and other psychological functioning. As Dennett vividly puts it, "[c]onsciousness is cerebral celebrity." Such global effects are, moreover, thought by some to be the function that consciousness has, in virtue of which it is useful for an organism's mental states to be conscious. The concept of access consciousness in effect purports to isolate a kind of consciousness by reference to its mental function.

p0075 The potential for global effects on mental functioning and behavior does sometimes accompany the consciousness of mental states, but that is arguably not always so. Conscious peripheral perceptions have little if any global effect, and many conscious passing thoughts and desires also have none.

p0080 Conversely, much thinking occurs without being conscious, as with the nonconscious thoughts that are steps in much problem solving. Nonetheless, these nonconscious thoughts sometimes have a significant effect on mental functioning. So it is unclear that a state's potential to have global effects coincides with its being conscious. And if it does not, such potential would not then be a distinctive function that conscious states serve in contrast to mental states that are not conscious.

p0085 Questions can also be raised about Block's notion of phenomenal consciousness. Block explains phenomenal by saying that there is always something it's like to be in a phenomenally conscious state. But he also argues that phenomenal consciousness occurs in connection with subliminal vision, extinction, and other clinical conditions in which the relevant states are not in any intuitive way conscious. So it is tempting to construe Block's phenomenal consciousness as simply a matter of a state's having mental qualities, independent of whether that state is conscious.

p0090 Conscious qualitative character is intuitively such a distinctive mental phenomenon that it has been thought by some not to be susceptible of any informative explanation. Thus Levine has argued that even if brain function subserves qualitative states, there is an explanatory gap that may make it impossible to explain why particular brain events result in the particular qualitative states they do, or indeed in any at all. Chalmers argues similarly, maintaining that this is the Hard Problem of consciousness.

p0095 It may be, however, that whatever explanatory difficulty now confronts us is not ineluctable, but is rather due simply to our current state of knowledge about qualitative character, and its relation to brain function. Levine urges that our understanding of the neurological basis of qualitative consciousness can never be firm and complete in the way our current understanding is of the chemical nature of water. But it may be that as our understanding of the neutral basis of qualitative consciousness approaches the completeness and theoretical sophistication of current chemistry, the intuitive contrast in explanatory adequacy of the two cases will disappear.

p0100 Another factor that seems to block any informative explanation of qualitative consciousness is the view of some theorists that we can know about qualitative properties only by the way we are conscious of them. This view reflects the traditional idea, inspired by Descartes, that consciousness gives us infallible or in any case incorrigible access to our own mental states, and indeed that this access exhaustively reveals their mental nature.

p0105 The view that we can know about mental qualities only by way of consciousness underlies the familiar view, advanced by Locke in *An Essay Concerning Human Understanding*, that it is conceivable that the mental quality two individuals have on seeing the same object differ in undetectable ways. And it is sometimes held to be conceivable that an individual physically and functionally identical to us might undetectably lack mental qualities altogether. Such occurrences would be undetectable only if one's consciousness of one's own mental qualities were the only way to gain knowledge about them, which would block any explanation of mental qualities in terms other than consciousness. In particular, it would prevent explaining mental qualities in terms of their neural basis.

p0110 But it is arguable that mental qualities are individuated by their location in a quality space that corresponds to the quality space of the perceptible properties accessed by the relevant sensory modality. Thus mental red, for example, is individuated by its relation to other mental color qualities, corresponding to the relations physical red has with perceptible physical colors. If so, mental qualities are not individuated after all by one's individual access to those qualities. The conceptual

ties between families of mental qualities and perceptible physical properties would then make undetectable inversion and absence of mental qualities conceptually incoherent. And there would then be little reason to see an explanatory gap as inevitable.

p0115 Both intentional and qualitative states often occur consciously. But some theorists hold that whereas intentional states also occur without being conscious, that is not so for qualitative states. And that view leads some to use the term 'consciousness' to refer simply to conscious qualitative character.

p0120 But even if all qualitative states were conscious, the property of being conscious would only be one aspect of their mental nature. As G. E. Moore noted, conscious qualitative states differ among themselves in respect of mental quality, though they have in common the property of being conscious. Consciousness is accordingly a distinct property from any mental quality. Focusing on what it's like for one to be qualitative states yokes together these two aspects of their mental nature, making it seem that they cannot occur independently. But each does occur apart from the other, since nonqualitative, intentional states are sometimes conscious, and qualitative states sometimes occur without being conscious.

s0020 Concepts and Theories

p0125 Conflating distinct concepts of consciousness can result in confused theories. Block has urged that this sometimes happens when theorists fail to distinguish access from phenomenal consciousness. Failing to distinguish creature, transitive, and state consciousness can also have important consequences for theories of consciousness.

p0130 As already noted, failing to distinguish creature consciousness from state consciousness may encourage the view that mental states never occur without being conscious. And that may tempt one to identify being conscious with being mental, and so to hold that there is nothing more to a state's being conscious than its simply being mental. And since many mental states are states in virtue of which one is conscious of things, identifying consciousness with mentality will invite the view that a state's being conscious consists simply in its being a state in virtue of which one is conscious of something. This has come to be known as a first-order theory of consciousness, best exemplified by Dretske.

p0135 Holding all mental states to be conscious encourages a first-order theory of consciousness. Nonetheless, traditional thinkers from Aristotle to Descartes, Locke, and Brentano did not endorse that view. As noted in the section 'Concepts of consciousness (I),' it was rare until Brentano's time to describe mental states as conscious at all. Even though Descartes and Locke were plainly writing about the property we describe as a state's being conscious, they did not say that our mental states are all conscious, but rather that we are conscious of all our mental states.

p0140 The difference is significant. On a first-order theory, a state's being conscious is its being in a state of transitive consciousness, a state such that one's being in that state constitutes being conscious of something. What we describe as a state's being conscious was traditionally described in terms of one's being conscious of that state. Because it appeals to transitive consciousness, we can refer to the view that a state's being conscious consists in one's being conscious of that state as the Transitivity Principle (TP). And because being conscious of a state involves some higher-order awareness, theories that adopt TP are known as higher-order theories.

p0145 The contrast between higher-order and first-order approaches marks a major theoretical divide in explaining consciousness. On a higher-order theory, a state is conscious simply if one is transitively conscious of it; on a first-order view, a state is conscious instead if it is itself a state of transitive consciousness.

p0150 Each approach faces difficulties that the other avoids. Because first-order theories classify as conscious any state in virtue of which one is conscious of something, such theories may be unable to account for the occurrence of nonconscious, subliminal perception and thinking that intuitively fails to be conscious.

p0155 There is extensive evidence that perceiving does sometimes fail to be conscious. As Anthony J. Marcel, Bruno G. Breitmeyer and Haluk Ögmen, and Zoltan Dienes and Josef Perner, have shown,

subjects in masked-priming experiments are presented with a visual stimulus followed at a specific interval by another. Without the second stimulus, subjects would see the first stimulus consciously; but when the second does occur it masks the first, leading subjects to see consciously only the second. Nonetheless, there is evidence that subjects do after all see the first stimulus, since it primes them for enhanced performance in various tasks, including largely correct guesses about that stimulus. Subjects see the first priming stimulus, but not consciously.

p0160 In blindsight, the study of which was pioneered by Lawrence Weiskrantz, subjects with damage to an area of primary visual cortex report not seeing stimuli presented in the area of their visual field corresponding to cortical damage, but again their guesses about these stimuli are well above chance. Subjects evidently see the stimuli, though the seeing is not conscious.

p0165 The view that all mental states are actually conscious may be problematic in another way. Explaining what it is for a state to be conscious plainly must appeal to mental properties of that state. But if a state's being mental coincides with its being conscious, any explanation of consciousness in terms of mentality risks being circular.

p0170 First-order theorists would reply that, since consciousness does coincide with mentality, we explain what it is for a state to be conscious by explaining what it is for that state to be mental. Such theorists would also point to difficulties that higher-order theories seem to encounter. Most pressing, they urge, is the possibility of inaccurate higher-order awareness. The way we are aware of things is not always accurate; so if a state's being conscious consists in one's being aware of that state, perhaps that higher-order awareness can itself fail to be accurate. But it is unintuitive to suppose that consciousness could be inaccurate; with consciousness, many maintain, appearance and reality coincide.

p0175 Another challenge for higher-order theories is to explain why any such higher-order awareness occurs at all. Perhaps that awareness serves some function, so that having that awareness confers some adaptive advantage. But it is unclear what advantage such higher-order awareness might confer. First-order theories avoid this challenge, since they hold that a state's being conscious consists in its being in a state of being conscious of something. And it is plain that being conscious of things is crucial for a creature's successful functioning. The remaining discussion will examine in more detail the issues that divide these two approaches.

First-Order Theories

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p0180 An apparent advantage of first-order theories is that subjectively we seldom seem to have the sort of higher-order awareness that higher-order theories posit. John Searle has recently appealed to this in denying that we ever observe our mental states, or that we even could. When we see something, the seeing and the thing seen are distinct, but Searle insists that this distinction does not apply to our awareness of our own mental states.

p0185 Observation is a frequent model for how we are aware of our own mental states; as Locke famously put it, "[c]onsciousness is the perception of what passes in a Man's own mind." But observation is not the only way we might be aware of our mental states, and intuitively it is the least likely. More important, since higher-order theories countenance mental states that are not conscious, whatever higher-order awareness they posit need not itself consist in states that are conscious. And if those higher-order states are not conscious, it will seem subjectively that we have no such higher-order awareness. The higher-order awareness such theories appeal to is a theoretical posit, not something to be found in the phenomenological appearances.

p0190 A first-order theorist might insist that no higher-order mental state could result in one's being conscious of the first-order state it is about unless that higher-order state is itself conscious. That would decisively undermine the higher-order approach, since it would result in a vicious regress of higher-order awarenesses; each higher-order awareness, to be itself conscious, would require a higher-order awareness of it.

p0195 But that argument presupposes the first-order view that a state's making one transitively conscious of something coincides with its being a conscious state. Subliminally perceiving things results in one's being conscious of those things;

otherwise such perceiving would not affect one's mental functioning. Indeed, subliminal perception often results in qualitative discriminations of just the sorts we make by consciously perceiving things, as shown by Breitmeyer and Ögmen. States need not themselves be conscious to result in our being aware of things.

p0200 Consciousness is simply a matter of the phenomenological appearances. So it may seem that a higher-order awareness that is not itself part of those phenomenological appearances cannot explain consciousness. But in appraising any explanation, we must distinguish between what is to be explained and the considerations in virtue of which the explaining proceeds. Any satisfactory theory of consciousness must do justice to the phenomenological appearances. But it does so by explaining those appearances; the considerations that do the explaining need not themselves be limited to those phenomenological data, any more than we explain ordinary macroscopic phenomena solely by appeal to such macroscopic phenomena. Indeed, explaining the phenomenological appearances solely by appeal to those appearances would be circular and uninformative.

p0205 Dretske has advanced an elegant argument in support of a first-order approach. It often happens that we see two scenes that differ in some slight way, though without being conscious that they differ. Perhaps the scenes are alike except that one has ten trees, one of which is missing in the other. Nonetheless, one may consciously see the entire scenes, and so consciously see the tenth tree in the scene in which it occurs. So one has a conscious visual experience of the tenth tree. But despite that, one is not conscious of the experience of the tenth tree, since one is unaware of the two scenes differing. Dretske concludes that conscious experiences occur of which one is not conscious.

p0210 Scenes that differ in some unnoticed way are common in everyday experience. Still, Dretske's argument seems not to be decisive against TP and higher-order theories. One can be conscious of something in one respect and not in another. So one might in Dretske's example well be conscious of the experience of the tenth tree only as a part of the overall experience of the scene, though one is not conscious of the experience of the tenth tree as the way in which the two overall experiences differ. Since one could be conscious of the experience of the tenth tree, though not in the way Dretske argues against, Dretske's example does not establish that an experience can be conscious despite one's not being conscious of it.

p0215 Visual presentations that differ in some salient way that is not consciously noticed are the focus of experimental work on change blindness, in which salient changes occur that subjects do not consciously see, as shown by James Grimes and by Daniel Simons and Ronald Rensink. But if we are in some way blind to such unnoticed changes, perhaps we do not, as Dretske maintains, always consciously see the things in virtue of which two scenes differ in unnoticed ways. Dretske has recently addressed one experimental paradigm, developed by Grimes, in which the unnoticed changes occur during saccades, arguing that since visual input during saccades does not reach cortical areas, subjects are not blind to things that change, but only to the differences that result from those changes.

p0220 There is, however, a crucial way in which subjects are indeed blind to the changed objects. In one case of change blindness, a large parrot switches back and forth between being red and green. Dretske acknowledges that what subjects see corresponds to the actual stimulus; when the parrot is red subjects see red and when it is green they see green. But even when the parrot's color changes, there is often no change in what it's like for subjects; Grimes's subjects often continue seeming to see red when the parrot is green. These cases exhibit a divergence between the seeing and how we are conscious of it, which points toward TP and higher-order theories.

p0225 First-order theories, by arguing that a state is conscious if it is a state of being conscious of something, seem to leave no room for subliminal perceiving and nonconscious thinking. Dretske has also addressed this issue. Refining his first-order view, Dretske adds as a condition for perceiving's being conscious that the individual can cite the perceived fact as a justifying reason for doing something. This rules out subliminal perceiving, in which subjects deny perceiving anything and so cannot cite what they perceive in any way, much less as a reason for action.

p0230 Subjects' inability to give a justifying reason, however, may not show that they have no such

reason, but only that they have no conscious reason. We often do things for reasons that do not figure in our stream of consciousness; this is evident from cases in which such reasons later come to be conscious. So Dretske cannot accommodate subliminal perceiving without explaining how conscious reasons for doing things differ from reasons that are not conscious (see the section 'Language and function').

p0235 There is another empirical challenge for first-order theories. Libet and Haggard have shown that the cortical event that corresponds to subjects' deciding to make a basic movement occurs significantly before they are aware of that deciding. The most straightforward interpretation of these findings is that acts of deciding occur prior to those decidings coming to be conscious. If so, the mental state and its being conscious are distinct occurrences, contrary to first-order theories.

p0240 Dennett has sought to undermine higher-order theories by arguing that the hierarchy of mental states such theories posit is psychologically unrealistic. Being in a mental state results in things' seeming a certain way to one. But there is no difference, Dennett urges, between how things seem to one and how they seem to seem. So there cannot be higher-order states in virtue of which it seems to us that we are in particular first-order states. This conclusion points toward the first-order approach.

p0245 But Dennett's view again has difficulty with subliminal perceiving, since that in effect consists of something's seeming to one though it does not seem to one that it does. Conscious perceiving, by contrast, is perceiving in which it does seem to one that something seems to be some particular way. Dennett urges that these subliminal cases are not genuine perceiving at all, but mere "events of content-fixation." But since having content is a mark of the distinctively mental, it may be more reasonable to accept the subliminal cases as being genuine perceiving, and thereby a second level of awareness in conscious perceiving.

p0250 Global-workspace theories, on which a state is conscious if it has the potential to affect a broad range of mental functioning and behavior, are in effect a type of first-order theory, since they appeal to no higher-order states. Robert Van Gulick has sought to combine global-workspace theory with aspects of a higher-order theory, arguing that a state's having global connections results in one's being conscious of oneself. But this is at best a qualified type of higher-order theory, since being conscious of oneself need not by itself involve being conscious of any particular mental state.

p0255 One could combine global-workspace theory with a higher-order approach by stipulating that the global connections a conscious state has must include a higher-order awareness of that state. Still, a theory must specify what it is for a mental state to be conscious, and it is not obvious whether, on such a hybrid theory, a state's being would be a matter of the higher-order awareness or of the global connections. If the global ties were seen as responsible for consciousness, that would still be a first-order explanation of consciousness.

Higher-Order Theories (I) s0030

p0260 The alternative to the first-order approach is a higher-order theory that conforms to TP, on which a state's being conscious consists in its being a state of which one is conscious. As noted in the section 'Concepts and theories,' this approach dominated traditional discussion of consciousness from Aristotle through Descartes and Locke to Brentano. The higher-order theory most often advanced has been the inner-sense theory, developed by Armstrong and by Lycan, on which we are aware of our conscious states by sensing or perceiving those states.

p0265 This way of implementing TP has a number of advantages. For one, we are conscious of things most often by sensing and perceiving them. We are also conscious of something if we have a thought about it as being present; but sensing and perceiving are what come first to mind in connection with being conscious of things. Indeed, it is very likely by analogy with sensing that we regard having a thought about something as being conscious of that thing only if the thought represents it as present to one.

p0270 A second reason inner sense is inviting has to do with qualitative consciousness. If qualitative states are conscious in virtue of our perceiving them, that may help explain qualitative consciousness, since perceiving is itself qualitative. In particular, the mental qualities we are conscious of differ in

myriad fine-grained ways, seemingly outstripping the ability of concepts to capture those differences. So perhaps the differences in virtue of which we are conscious of our qualitative states can be captured only by higher-order perceptual awareness, which itself involves mental qualities.

p0275 Another advantage of inner sense has to do with a condition that higher-order awareness must satisfy. Not all higher-order awareness of one's own mental states results in those states' being conscious. One may be aware of one's own mental states by theorizing about oneself or by taking the word of somebody who knows one very well. But these kinds of higher-order awareness do not by themselves result in the relevant states' being conscious. The higher-order awareness must, it seems, be immediate in some way; as Descartes put it, "I use [the term 'thought'] to include everything that is within us in such a way that we are immediately aware of it" (Fourth Replies). Inner sense captures this constraint, since perceiving something seems subjectively to result in one's being immediately conscious of the objects perceived.

p0280 Finally, it is tempting to explain why any higher-order awareness occurs in the first place by appeal to the usefulness of our monitoring our first-order mental states. Since perceiving monitors our environmental and body conditions, it is arguable that the higher-order awareness in virtue of which such monitoring occurs is very likely perceptual in nature.

p0285 Despite these advantages, a number of difficulties face any inner-sense theory. The qualitative character of sensing and perceiving underlies several of those advantages, but is also the source of the principal difficulty. Though higher-order awareness results in our being of first-order mental qualities, we have no reason to think that our higher-order awareness itself has any qualitative character. We never subjectively encounter higher-order mental qualities, in addition to those of our first-order qualitative states. Perhaps that is only because our higher-order awareness is seldom itself conscious, so that we are not conscious of our higher-order mental qualities. But sometimes we are introspectively aware of our conscious states, conscious of them, that is, in a way that is reflective and attentive. When we are, we are conscious also of our higher-order awareness of first-order conscious states; but even then we are never conscious of higher-order mental qualities.

p0290 Even though our higher-order awareness evidently lacks qualitative character, it might resemble perceiving in other significant ways. Thus Lycan has recently argued that we attend to our conscious states much as we attend to the things we perceive. And he urges that the voluntary control we have over which perceptual states in our sensory fields we are conscious of more closely resembles the voluntary control we have in perceiving than in thinking about things.

p0295 It is unclear that we have much voluntary control over our awareness of our conscious states. But that aside, we arguably have as much control over our thought processes as over our perceiving. And thinking about things allows us to focus attention on them no less than perceiving them. It is questionable whether any nonqualitative aspects of perceiving will sustain a compelling analogy with the higher-order awareness we have of our conscious states.

p0300 Though the appeal to higher-order qualitative character is inviting in explaining first-order conscious qualities, it is also very likely circular; higher-order mental qualities would need explaining no less than their first-order counterparts. And, though higher-order mental qualities would capture all the first-order differences among mental qualities that we are conscious of, a purely conceptual form of higher-order awareness may be able to do that as well (see the section 'Higher-order theories (II)').

p0305 We monitor environmental and bodily conditions perceptually, but that might not be necessary for one's own mental states. It would be enough for thoughts about those states would monitor those states if the states are causally implicated in leading to the thoughts. Indeed, feedback training can enable subjects to have reliable thoughts about their blood pressure and heart rate, based on visceral input that may involve no perceptual modality, and shown by findings in the 1970s by Brener and Jones and by Cinciripini, Epstein, and Martin. Subjects seem spontaneously to have reasonably reliable thoughts about what their heart rate or blood pressure is.

p0310 More important, consciousness does not always play any monitoring role whatever. As Nisbett and Wilson showed in their well-known work in the

1970s, we are sometimes conscious of ourselves as being in various mental states that we are not actually in. Such confabulatory consciousness, which also occurs in various dissociative disorders, evidently serves to make our mental lives seem more sensible or otherwise acceptable to ourselves or to others. In these cases, which may not be all that rare, our being conscious of ourselves as being in particular mental states does not serve to monitor our actual mental functioning, thereby undermining the monitoring analogy with perception.

Higher-Order Theories (II)

Aristotle held a mixed higher-order theory, on which our higher-order awareness is perceptual for conscious perceiving, but consists of higher-order thinking for conscious thought. According to inner-sense theory, higher-order awareness is perceptual for all our conscious states, both qualitative and intentional. But perhaps purely intentional higher-order states will work at least as well for conscious intentional and qualitative states alike.

In what is arguably its most straightforward form, developed by Rosenthal, this theory posits distinct, occurrent higher-order thoughts (HOTs), in virtue of which we are aware of our conscious states. For one to be aware of one's first-order states, these HOTs must have the content that one is, oneself, in the state in question. As with other thoughts, HOTs could occur in creatures without language; nonlinguistic creatures often express thoughts and other purely intentional states, thereby providing evidence for their occurrence.

HOTs have many of the advantages of inner sense. As noted in the section 'Higher-order theories (I),' HOTs can subserve such monitoring as actually occurs if the monitored state is causally implicated in the occurrence of a HOT. More importantly, HOTs can accommodate the apparent immediacy with which we are aware of our conscious states.

It is worth noting that the traditional claim that our consciousness of our mental states is immediate rests solely on subjective appearances. And that warrants holding only that such consciousness seems to be unmediated, not that nothing actually mediates between the mental states and the corresponding higher-order awareness. Indeed, that is the situation with perceiving; it seems subjectively that nothing mediates between perceiving and what we perceive even though there is much that does mediate.

HOTs can yield a higher-order awareness that is no less spontaneous and subjectively unmediated. It may be that some inference, observation, or other mental processes lead to a HOT that one is in a particular state. But if one is not conscious of those processes, one's awareness of the first-order state will be subjectively direct and immediate. Moreover, HOTs would seldom themselves be conscious; they would be conscious only if there was a yet HOT about them. And when HOTs are not conscious, the higher-order awareness that results would appear spontaneous and unmediated.

As noted in the section 'Higher-order theories (I),' mental qualities differ in ways that outstrip our concepts for specific qualities. We can consciously distinguish vastly more mental color qualities, for example, than we have concepts for the specific qualities. But concepts for specific qualities are not needed here. When asked to describe specific colors, we typically do so comparatively, saying that a particular color is darker than another or closer to one color for which we have a name than to another. And we do the same in describing specific mental qualities. We use comparative concepts to fine-tune our ability to describe, and hence conceptualize, particular mental qualities. This fits with the suggestion in the section 'Concepts of consciousness (II)' that we individuate mental qualities by their location in a quality space homomorphic to that of the perceptible properties accessed by the relevant modality. We make extensive use of comparative concepts to locate specific mental qualities and the corresponding perceptible properties in their respective quality spaces, thereby individuating them in conceptual terms. This idea is developed by Rosenthal.

There is compelling evidence that we do individuate mental qualities comparatively. As Raffman has noted, our ability to determine whether two simultaneously presented qualities are the same or how they differ is far more accurate than our ability to identify, recognize, or remember the very same qualities when they occur successively. The best explanation is that we are conscious

of very fine qualitative similarities and differences comparatively; having comparisons available greatly enhances our discriminative abilities.

p0350 Higher-order perceiving cannot explain the lighted-up qualitative character of conscious mental qualities, since the higher-order mental qualities would themselves need to be explained. But since HOTs are purely intentional states and so have no qualitative character, it may seem intuitively implausible that they could result in there being something it's like for one to be in conscious qualitative states.

p0355 There is reason, however, to think that HOTs can actually do this. We sometimes become conscious of differences among mental qualities only when we have words to hang those differences on, as with the different mental qualities that result from tasting various wines. Such mental taste qualities may, at an early stage, be consciously indistinguishable. But we sometimes come, upon learning suitable wine-tasting terms, to be conscious of the qualities as distinct. Learning new words reflects the learning of the concepts those words express, concepts that result in our being able to have more fine-grained thoughts about our mental qualities. Since purely intentional states about mental qualities can by themselves result in what it's like for one to be more fine-grained, HOTs can presumably result in there being something it's like for one in the first place.

p0360 A theory that posits distinct, occurrent, HOTs is not the only type of theory that posits purely conceptual states to explain our higher-order awareness. Brentano advanced a theory on which that higher-order awareness is due to intentional content that is intrinsic to each conscious state. This approach has been more recently defended by Gennaro and Kriegel.

p0365 Intrinsicalism about higher-order awareness has many of the inviting features of first-order theories, for example, in squaring with the phenomenological sense that higher-order awareness seldom occurs. Intrinsicalism thereby seeks to combine the advantages of both first-order and higher-order approaches.

p0370 Intrinsicalism also promises to handle a problem some have raised for higher-order theories. A distinct higher-order perception or thought could misrepresent one's mental life, either by making one conscious of a state in a way that distorts its nature or by making one conscious of a state that one simply is not in. And Levine has argued that there is no principled answer to what it would be like for one in such a case. Would having a sensation of red along with a higher-order awareness of that sensation as green be subjectively like seeing red? Or would it be like seeing green? Intrinsicalism appears to help, since an intrinsic higher-order awareness might be unable to misrepresent the state of which it is a part.

p0375 But higher-order theories face no difficulty about such cases. What it's like for one on these theories is determined by the way the higher-order awareness represents the first-order state. Consciousness is a matter of mental appearance, that is, of how our mental lives appear to us, and on those theories that mental appearance is due solely to the higher-order awareness. And intrinsicalism could not help in any case. There is no reason why a state's higher-order content could not misrepresent that state.

p0380 Intrinsicalism also does not fit comfortably with Libet's and Haggard's results, on which we are conscious of states only slightly after those states themselves occur. Perhaps higher-order content arises slightly after the rest of the state, but the intrinsicalist must explain why that higher-order content counts as intrinsic.

p0385 Intrinsicalism may conform to the phenomenological sense that we seldom are conscious of any higher-order awareness. But as noted in the section 'First-order theories,' phenomenology determines only the psychological reality to be explained, not what theories should posit to do that explaining. Kriegel has argued that we are generally conscious of our higher-order awareness, but only peripherally. That is unlikely with many perceptions and thoughts that are themselves only peripherally conscious. But such peripheral consciousness of higher-order awareness could in any case occur equally with distinct HOTs.

p0390 There is, finally, a difficulty about the mental attitude of conscious intentional states. Wondering or doubting whether one is in a mental state does not result in one's being conscious of that state. The higher-order awareness must be one of mental affirmation. No intentional state, moreover, has more than one mental attitude; no state is a case of

both wondering and doubting or both doubting and mentally affirming. So when wondering or doubting is conscious, since the higher-order awareness must be a case of mental affirmation, it must be distinct from the wondering or doubting itself.

p0395 Carruthers has argued that we lack the cognitive and cortical resources to sustain occurrent HOTs for all our conscious states, and that occurrent HOTs would also confer no adaptive advantage that could explain the evolution of creatures with such HOTs. So he has developed a theory on which a state is conscious not when a HOT actually occurs, but when it is simply disposed to occur.

p0400 The dispositionalist HOT theory is intuitively inviting. We are seldom conscious of our higher-order awareness, but focusing on the state often results in being conscious of that awareness. So perhaps higher-order awareness does not actually occur whenever a state is conscious, it is disposed to occur on attending to it. But the better explanation is that we simply are not conscious of the higher-order awareness that accompanies ordinary conscious states. And again, the phenomenological appearances should not in any case guide what posits a theory makes.

p0405 Since we do not now know what cortical resources subserve specific thoughts, we have no reason to think we lack the cortical resources needed for occurrent HOTs. And we may need fewer resources than it seems subjectively. Conscious visual perception seems equally acute throughout our visual field. But as Dennett has stressed, that subjective sense is confabulatory; so we doubtless need far fewer HOTs for conscious parafoveal vision than for conscious central vision.

p0410 The dispositionalist theory, moreover, faces a difficulty in implementing TP, which motivates higher-order theories generally. Being disposed to have a thought about something does not make one conscious of that thing; so being disposed to have a HOT does not make one conscious of the mental state that HOT would be about.

s0040 Language and Function

p0415 As noted in the section 'First-order theories,' Dretske seeks to accommodate subliminal perceiving within a first-order framework by holding that perceiving is conscious only if one can cite what is perceived as a reason for doing something. But we can cite reasons only when they are conscious. So that suggestion requires being able to distinguish conscious from nonconscious reasons, which seems in turn to point toward a higher-order theory.

p0420 A standard test for a mental state's being conscious is that the individual can report being in that state. If we have good reason to think somebody thinks, perceives, or feels something but the person sincerely denies being in that state, we conclude that the thinking, perceiving, or feeling is not conscious. This test guides us in both in commonsense contexts and experimental psychology.

p0425 Higher-order theories can explain the reliability of this test. Every sincere speech act expresses an intentional state that has the same content as the speech act and a mental attitude that corresponds to the speech act's illocutionary force. So a sincere report that one is in a mental state expresses an assertoric thought that one is in that state, and the ability to report being in some mental state is the same as the ability to express a HOT that one is in that state. We can best explain why a state's being conscious coincides with one's ability to report that state by supposing that a state is conscious only when the HOT such a report would express is present. The reportability test for consciousness actually supports the HOT hypothesis.

p0430 Reporting a mental state reveals consciousness only if the report is subjectively noninferential; a report based on conscious inference or observation is compatible with the state's not being conscious. This fits with the requirement noted in the section 'Higher-order theories (II)' that HOTs themselves not rely on any inference of which one is conscious. The reportability test applies only to creatures with language and, indeed, the ability to talk about their mental states. But we can use the test to determine what is responsible for consciousness in that case, and then apply that to nonlinguistic creatures.

p0435 In the case of humans, there is an even closer tie between consciousness and speech. Whenever we verbally express a first-order thought, that thought is invariably conscious. By contrast, thoughts expressed only by nonverbal behavior often fail to be conscious. This may have led Descartes to

insist that nonlinguistic creatures have no conscious thoughts, since if they did they would express them verbally (letters to More and to Newcastle).

p0440 But the HOT theory can explain the tie in humans between consciousness and speech without appeal to Descartes's remarkably implausible view. Humans seldom note the difference between reporting a thought and verbally expressing it; one may not even recall a moment later whether one said that something is so or that one thinks it is. Whenever one says something, one might as easily have said that one thinks that thing.

p0445 Because we are disposed to report a thought whenever we verbally express it, we are also disposed to have the HOT that such a report would express. So, as Rosenthal has shown, verbally expressing a thought results in that thought's being conscious. Expressing a thought nonverbally does not dispose us to report having that thought; so nonverbally expressed thoughts often fail to be conscious.

p0450 On first-order theories, a state's being conscious consists in that state's making one conscious of something, which is pivotal for an organism's functioning. So, as noted in the section 'Concepts and theories,' first-order theories readily explain why mental states are conscious. Higher-order theories face a challenge on this score, since it is unclear what the function of higher-order awareness might be.

p0455 A higher-order theorist might reply that monitoring one's mental states serves an important function. Thus Armstrong urges that a state's being conscious enhances problem solving and planning. But monitoring may not significantly enhance problem solving and planning, since those processes rely largely on causal connections among first-order thoughts and desires, which in turn reflect the intentional content of those states. Indeed, those processes can be more successful when they are not conscious, as shown in recent work by Dijksterhuis and colleagues and by Leib Litman and Robert Reber.

p0460 In creatures with suitable linguistic ability, reportability coincides with a state's being conscious. But such reportability confers no function that the state lacks when it occurs nonconsciously. Rather than report a state, an individual can convey being in that state by expressing it verbally; reporting adds no relevant information. And the consciousness of verbally expressed thoughts in the case of humans hinges on our being strongly disposed to a thought whenever we express it verbally, which itself seems to serve no particular function.

p0465 If a state's being conscious adds little significant function to what the state has occurring nonconsciously, adaptive value cannot explain why many states come be conscious. But a nonadaptive explanation is possible. Creatures sometimes come to be aware that a perceptual error has occurred. That realization involves a creature's having the thought that it was in an erroneous state, say, of the sort that occurs when, for example, a red object is in front of it. And that in time will dispose the creature to have such thoughts whenever it is in such states, and thereby to be conscious of those states.

p0470 Purely intentional states require a different account. Consider creatures that can report their own thoughts, but only by inferring from their behavior what it is likely that they are thinking. Since their reports always rely on observation and inference, the thoughts they report this way are not conscious.

p0475 But in time the difference between reporting their thoughts and expressing them verbally will come to be unimportant to them; whenever they are disposed to say something, they will also be disposed to say that they think that thing. Reporting their thoughts will become automatically interchangeable with verbally expressing them. As Rosenthal has shown, since being disposed to report a thought is being disposed to express a higher-order awareness of it, those thoughts will then often be conscious.

p0480 This account applies only to creatures with suitable linguistic abilities, but it may be that nonlinguistic creatures are conscious of their mental states only in respect of their qualitative character. It is likely that we can explain why some mental states are conscious independent of any added function that the consciousness of those states might confer.

See also: Cultural Milieu, History, and Intuitive (Folk) Theories of Consciousness (00023); History of Philosophical Theories of Consciousness (00036); Theories of Consciousness: Cognitive (00077); Intentionality and Consciousness (00041); Function(s) of Consciousness (00033); Language and Consciousness (00043).

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Biographical Sketch

David M. Rosenthal is professor of philosophy and coordinator of the interdisciplinary concentration in cognitive science at the Graduate Center, City University of New York. He has written extensively in philosophy of mind, especially about consciousness, and has lectured widely on consciousness and related topics. He has developed and defended a higher-order-thought theory of the consciousness of mental states, and a theory of mental qualities and qualitative consciousness based on a homomorphism of mental qualities with the perceptible properties of physical objects. He is currently the president of the Association for the Scientific Study of Consciousness, and has been a McDonnell Visiting Lecturer and a McDonnell-Pew Fellow at the University of Oxford and a Resident Fellow at the Center for Interdisciplinary Research (ZiF) at the University of Bielefeld. He received his PhD from Princeton University and his AB in history from the University of Chicago.

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Non-Print Items

Abstract:
The term 'consciousness' is used in several ways: to describe a person or other creature as being awake and sentient, to describe a person or other creature as being 'aware of' something, and to refer to a property of mental states, such as perceiving, feeling, and thinking, that distinguishes those states from unconscious mental states. Distinguishing these different concepts of consciousness is crucial in evaluating the major theories of what it is for a state to be conscious. Among those are first-order theories, on which a mental state is conscious if being in that state results in one's being conscious of something; global-workspace theories, on which a state is conscious if it's widely available for mental processing; inner-sense theories, on which a state is conscious if one senses or perceives that state by way of a special inner faculty; and higher-order-thought theories, on which a state is conscious if one is aware of that state by having a thought about it. We will consider the advantages and shortcomings of these theories and variants of them.

Keywords: Access consciousness; Blindsight; First-order theories; Function of consciousness; Higher-order thought; Inner sense; Intrinsicalist theories; Phenomenal consciousness; State consciousness; Transitive principle

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