

Consciousness and Functionality

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I. Utility and Consciousness

- There's plainly a lot of utility for one to be in a mental state of one kind or another. My question is whether any of that utility derives specifically from the state's having the property of being conscious.
- Conscious states have many other mental properties. Some states have intentional content and a mental attitude that one has toward that content. Conscious states have considerable utility in virtue of having such properties.
- And some states have qualitative character.

- Qualitative properties are arguably also representational. A mental quality of red, e.g., arguably represents red stimuli.
- I won't address what it is for qualitative or intentional states to be representational. It's enough for our purposes that they are. And being representational has great utility.
- Theorists differ about whether states that occur consciously can also occur without being conscious. I've argued that all types of mental state can—using my higher-order (HO) theory of consciousness along with my quality-space theory of mental qualities. But my argument won't rely at all on either theory, nor on whether mental states that are conscious can occur nonconsciously.

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- Once we distinguish the property of a state's being conscious from the other mental properties it may have, it's unclear what additional utility a state's having the property of being conscious could confer.
- That's wholly independent of whether the states could occur without being conscious.
- The utility of being in each type of state of state will rest largely on its representational properties. Those properties are causally keyed to increase the likelihood of various types of behavior and other mental states. This doesn't rely on any particular theory of mental representation. A functioning mind must depend on representational properties's having such rich causal ties.

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➤ The utility of being in a conscious cognitive or volitional state varies with its intentional content and mental attitude. Why would the state's being conscious add anything to or enhance that utility? How could it? What relevant causal powers would a state's being conscious confer?

➤ Similarly, qualitative properties will have differential causal powers responsible for the utility of being in those states. What additional relevant causal powers would be added by a state's being conscious?

➤ Might a state's being conscious strengthen its causal powers? More likely stronger causal powers would result in a state's being conscious. More on that shortly.

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➤ One might construe a conscious qualitative property of red as a determinate of the determinable of a state's being conscious (Moore 1903?). Similarly for all qualitative properties—and even intentional properties.

➤ If the property of a state's being conscious were the determinable, that would have no utility; only the determinates would have.

➤ Suppose instead that the property of being conscious is in each case the determinate. Being conscious would then be a different property for each type of qualitative state. But it would be only the *representational aspect* of each determinate that would have utility—not its being a determinate of the determinable of being conscious.

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- There is compelling experimental evidence that perceptual discrimination is sometimes more fine-grained when unconscious than when conscious (e.g., Scott & Dienes 2010).
- And unconscious deciding can have better results than conscious (Dijksterhuis *et al* 2006, Usher *et al* 2011). Being conscious seems to interfere with efficacy—and hence utility. (But maybe not with simple decisions.)
- And one can even read and do arithmetic without the relevant cognitive processes' being conscious (Sklar *et al* 2012). Each new finding of dramatic unconscious utility diminishes the credibility of holding that a state's being conscious contributes all that much—if any—functionality.

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- These considerations do not rely on any particular theoretical view of what it is for mental states to be conscious. In particular, the foregoing considerations are wholly independent of HO theories.
- The relevant consideration is that a mental state's being conscious is a property of that state—a strikingly innocuous assumption.
- But there is one theory that so construes the property of a state's being conscious as actually to build in functionality to it. So that theory may seem to show that the foregoing conclusion is mistaken. This is the global-workspace (GW) theory (e.g., Baars 1988, Dehaene & Naccache 2001; cf. Block's "access" consciousness 1995). Let's have a look.

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- On that theory, a state's being conscious consists in that state's being available to downstream mental processing. And that of course has considerable utility.
- On GW theory, every type of mental state can occur without being conscious. A state is conscious only if it reaches or affects the GW, and its doing so results in its becoming globally available. If the state doesn't do so, it isn't conscious.
- But there are clear counterexamples to that account of what it is for a state to be conscious. Some peripheral perceptions are conscious but plainly not globally available. And nonconscious cognitive and volitional states often have global effects.

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- These counterexamples are due specifically to the theory's building functionality into the property of being conscious—compelling reason to avoid that assumption in theorizing about consciousness.
- Still, many find GW theory inviting. Why? Some threshold neural signal strength is needed for a state to be globally available. And signal strength is also needed for a state to be conscious; perception in experimental conditions is subliminal when signal strength is relatively weak.
- A state's having utility—being globally available—and the state's being conscious are distinct and occur independently. But they typically have a common cause.

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- The point about signal strength is crucial. Subliminal perceiving typically—not always—has less utility than conscious perceptions.
- But the lower utility is arguably due just to lower signal strength. And the failure of subliminal states to be conscious is as well. Utility is diminished not because the states aren't conscious. Rather, both diminished utility and the failure to be conscious are due to a common cause—like impending rain and a falling barometer, whose only connection is a common cause.
- There's another source of possible error in connection with GW theories—especially when they're evaluated against HO theories.

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- HO theories rely on noting that if one is in a mental state but wholly unaware of it, it's not a conscious state. By contraposition, a state is conscious only if one is aware of it. Bracket for now what kind of awareness.
- There is evidence that such HO awareness occurs in dlPFC (Lau & Passingham 2006). And Dehaene et al locate the GW also in PFC. PFC notably subserves many functions.
- So a state's reaching PFC arguably results both in a HO awareness of that state and in the state's being globally available. Different regions of PFC are operative; thus the counterexamples to GW theory. Still, distinguishing evidence for GW and HO theories can be a delicate matter.

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II. Why Posit Utility?

- It might seem that correcting faulty steps in reasoning and directing our thought processes in productive ways requires being aware of the relevant mental states (Shoemaker 1996, Armstrong 1968).
- On this picture, we mentally manipulate our thoughts and other mental states much as we might move physical objects around, and doing so requires being aware of the mental states we move around or adjust. This picture thus provides reason to hold that mental states' being conscious does, after all, have significant utility.

- But it's unlikely that we control and direct our mental states as this naive picture suggests. Rather, faulty reasoning gets corrected by causal ties that hold among states in virtue of their intentional contents.
- When reasoning turns out to be faulty—by arriving at a mistaken or undesired result—its doing so causes revisions earlier in the process, perhaps by trial and error, till one adjusts or drops the faulty step.
- We can see this in the way consciously attending to the steps, perhaps writing them down, is typically slow, awkward, and often inefficient—as compared to just setting out and just thinking through things again.

- We would like to feel that we're in control of our mental lives at least to some degree. And indeed we are. The mistake is to assimilate control to conscious control.
- One might think that blindsight and other neural deficits that block mental states from being conscious show that being conscious has utility, since the perceiving in such cases is less accurate.
- But these deficits not only block states from being conscious, but also impair the perceptual process independent of its being conscious. The destruction of area V1 in blindsight, e.g., greatly diminishes visual processing. Similarly for deficits such as prosopagnosia and amnesia.

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- There's a methodologically subtle reason that leads people to think there's utility to mental states' being conscious. We greatly underestimate the utility of nonconscious states because the plethora of conscious states typically makes it unnecessary to rely on any that aren't conscious.
- Blindsight—due to V1 lesions—results in vision that's accurate under forced-choice guessing > 80%. But most patients never rely on it. Since only part of V1 is missing, patients can use their intact vision.
- But a recently tested patient, TN, has total loss of V1, and can use only blindsight in, e.g., successfully avoiding obstacles when walking down a hallway.

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- Similarly with a blindsight monkey with surgical ablation of all of V1, who could catch flies in midair, among other things.
- Evidently the utility of blindsight is greatly amplified if one has no option but to rely on it. Still, blindsight vision seems never to become conscious.
- So long as one can rely on conscious perceptual input, one can safely ignore perception that isn't conscious. Or at least seem to; we doubtless rely a lot more on unconscious perception than it seems subjectively that we do. When that luxury is removed, nonconscious perception is needed, and its substantial utility then becomes evident.

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- It's inviting to seek to understand and even explain things by appeal to their function. But explaining is often independent of function. We understand and explain very many things by appeal to mechanical and compositional considerations.
- Still, one type of explanation makes special use of functionality—appeal to reproductive advantage. If there's no significant utility to states' being conscious, why it is that so many of them are conscious?
- Many traits evolve not because they're advantageous, but by accident or because they come along for the ride: The DNA responsible for them also yields traits that are advantageous.

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- But it may seem unsatisfying to posit such an explanation for mental states' being conscious. States' being conscious seems so salient in our mental lives that we'd like not to settle for its being just an accident.
- Still, if the foregoing arguments are right, we won't get a better evolutionary story. It's no good to insist on functionality to save reproductive advantage; we need to assess functionality *independently* and accept where that assessment leads us.
- So we must consider the possibility that mental states are conscious not because of evolutionary selection pressures, but due to other factors.
But what might those other factors be?

III. Whence Consciousness?

- Here we must be a bit speculative; there just isn't yet enough solid science for more. And here different theories of consciousness do allow and preclude different moves.
- If, e.g., being conscious is built into mental states, there's nothing to explain—though that picture also provides no understanding and precludes nonconscious mental states.
- I'll propose an explanation that builds on my higher-order-thought (HOT) theory. On that theory, when a mental state is conscious, one is aware of it by having a thought that one is in that state.

- As noted earlier, if somebody is in a mental state but wholly unaware of being in it, it's not conscious. So a state is conscious only if one is aware of being in it.
- Thus the use, in commonsense contexts and experimental work alike, of reports to test whether a state is conscious. If one can report being in a state, one is aware of that state. So the state is conscious.
- And that points to the kind of awareness that figures here. A report that one is in a mental state *expresses a thought* that one is in it. So we can hypothesize that one is aware of one's conscious states by having thoughts that one is in them. Hence the HOT theory.

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- HOTs are seldom conscious; would require a third-order thought, and that's rare. When one *introspects* a state, one has a *conscious* thought that one is in that state; when a state isn't conscious at all, there's *no thought* that one is in it. When there is such a thought *but it isn't conscious*, the state is *nonintrospectively conscious*.
- The HOT must not seem *subjectively* to rely on inference, since our awareness of our conscious states seems unmediated.
- Mental states can be conscious in respect of some of their mental properties but not others. The HOT theory explains that: A state is conscious in respect of whatever properties the HOT represents it as having.

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- I won't say more about the theory, since it figures here just to explain why so many states are conscious if that has no utility.
- My explanation will be in two parts: one for mental states' being conscious in respect of their qualitative properties, and a second, very different account for states' being conscious in respect of their intentional content and mental attitude. And because of time, I'll be very sketchy.
- Sometimes perceiving initially misleads; one initially thinks something is blue and on a second look see it's green. In such cases, one can become aware that the way something is didn't initially fit with the way one took it to be.

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- And this provides an incipient concept of being in a state that represents things in respect of their perceptible properties—the concept of a sensory mental state.
- Having such concepts allows the forming of HOTs about one's states in respect of their qualitative properties. Still, why would one have such HOTs so often?
- Sensations of red objects tend to cause thoughts that there's a red object in front of one. And a thought that there's a red object in front of one will come to dispose one also to have a thought that one is sensing a red object in front of one. That perceptual thought disposes one to have a relevant HOT. (Cf. Chen et al for a similar account.)

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- HOTs about states in respect of their intentional properties are a longer story, and likely occur only in creatures that not only have language, but can talk about their thoughts *in a third-person way*.
- They talk about thoughts as states that dispose one to say and do various things. In particular, my speech act that p reflects my having a thought that p. So you can infer that I think that p simply because I say that p.
- And you can also infer that about yourself. And as that inference becomes *automatic*, your saying that p often disposes you to think that you think that p. It disposes you to have a HOT about your thought that p.

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- On that account, creatures without language that's rich enough to think about intentional states won't be in any mental states that are conscious *in respect of the intentional properties* of those states.
- But infants and nonlinguistic creatures do lots of perceptual error correcting. So they can be in plenty of states that are conscious *in respect of the qualitative properties* of those states. So perceptions, e.g., will be conscious in respect of their qualitative, though not their conceptual, properties.
- This fits comfortably with our pretheoretic hunches about such creatures. We have no strong sense that their cognitive states are conscious, just their qualitative states.

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Thanks for your attention

Shuo Chen, Changle Zhou, Jing Li, & Hua Peng, "Asynchronous Introspection Theory: The Underpinnings of Phenomenal Consciousness in Temporal Illusion," [Minds & Machines](#) online December 21, 2016.

Rosenthal, "Consciousness and Its Function," [Neuropsychologia](#), 46, 3 (2008): 829-840, <http://tinyurl.com/drcunycg/DR-func.pdf>

Rosenthal, "Higher-Order Awareness, Misrepresentation, and Function", [Philosophical Transactions of the Royal Society B: Biological Sciences](#), 367, 1594 (May 19, 2012): 1424-1438, §5, <http://tinyurl.com/drcunycg/DR-Mcogn-Mrepn.pdf>

For §III, above: Rosenthal, selections from chapters 7 and 10, [Consciousness and Mind](#), Oxford: Clarendon Press, 2005, <http://tinyurl.com/drcunycg/DR-Facilitation-of-HOTs.pdf>