Consciousness and Its Function

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OVERVIEW

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IIA. Consciousness and Rationality

- It’s often held that conscious states differ from mental states that aren’t conscious in having some special tie to rationality, or to intentional action or executive function.
- Mental states’ being conscious would thus enhance rationality, intentional action or executive control—or even enable it.
- If so, these functions might help explain why creatures evolved with mental states that are sometimes or often conscious.

I’ll raise doubts about these ties claimed for consciousness—ties with rationality, intentional action, and executive control.

Indeed, I’ll argue that consciousness has very little function, and that we should explain its occurrence not by appeal to functionality, but in some other way.

I’ll on a mix of (1) folk-psychological considerations, (2) theoretical considerations, and (3) experimental findings.

A caveat: Having little or no significant function does not mean having no causal efficacy; so the view I’ll defend does not imply or amount to epiphenomenalism.
The apparent centrality of consciousness in our lives may make it seem that it must have some significant function. But centrality does not imply function.

Also, it’s natural to insist that we can understand things only insofar as we can locate them within an explanatory net—and that may seem to require those things to have some significant function.

But we can explain consciousness not by appeal to some function, but by the causal factors that give rise to some mental states’ being conscious. Explanation does not require appeal to function.

A preliminary point: I’m concerned here only with mental states’ being conscious—with how conscious states differ from mental states that are not conscious.

My concern is not with the function of a person’s being conscious, as against the person’s being, e.g., asleep, nor with the function of a person’s being conscious of something—what I’ll call transitive consciousness.

A person’s being conscious—and being conscious of something—both have crucial functions that do not automatically transfer to mental states’ being conscious.
Plainly, one’s being conscious—i.e., one’s being awake and responsive to sensory stimulation—is pivotal for one’s functioning and survival.

And being in states in virtue of which one is conscious of various things is also vital to successful functioning (e.g., Merker 2005).

These functions are sometimes seen as due to mental states’ being conscious.

But I’ll argue that mental states derive little if any functionality from that of the individual’s being conscious, nor from that of the individual’s being conscious of things.

A second preliminary: I’m concerned here only with a special case of conscious states—that of conscious intentional states, such as thoughts and volitions.

So I won’t talk about the consciousness of qualitative states, such as sensations and perceptions (or at least not about their being conscious as qualitative).

Though I have argued elsewhere that qualitative states occur without being conscious, I won’t today say anything about what function their being conscious might have (at least insofar as they’re conscious as qualitative states).
A final preliminary—about how my argument today relates to my higher-order-thought theory of consciousness.

On that theory, as Dretske (1995) and others have noted, a mental state’s being conscious has little function.

But, though I briefly mention the theory in Part III, my argument that consciousness has no significant function in no way relies on that theory.

So if my argument is right, it provides an independent, if indirect, substantiation that the higher-order-thought hypothesis is on the right track.

Let’s turn to the apparent tie of intentional states’ being conscious with rationality.

Sydney Shoemaker (1996) urges that adjusting first-order beliefs and desires to make them more rational requires one to have “[second-order] beliefs about what [one’s] current beliefs and desires are. “... [F]irst-order beliefs and desires, do not rationalize ... changes in themselves” (33).

And David Armstrong’s (1968) “teleological deduction” that some mental states must be conscious holds that “any animal that solves problems mentally must” be aware of its relevant mental states (1968, 163).
Some theorists actually build a tie with rationality into the very account of what it is for a state to be conscious—as in Ned Block’s (1995) well-known notion of access consciousness:

A state is access conscious if its content is “poised for use as a premise in reasoning, ... [and] for [the] rational control of action and ... speech” (231, my emphasis; cf. 2001).

Access consciousness is, in effect, the type of consciousness that figures in rationality:

If a state is not access conscious, it lacks the potential to figure in rational thought and action, and conversely.

The idea that consciousness has some essential tie to rationality also inspires the well-known global-workspace theories of consciousness (e.g., Baars 1988, 1997; Dehaene and Naccache 2001; Tononi 2004; Van Gulick 2004) on which a state is conscious just in case it has global ties to many cognitive states—ties that presumably subserve the rationality of one’s thoughts and desires.

Introspection itself, moreover, may seem to underwrite a connection between consciousness and rationality, since we’re never aware of our own thinking as being rational unless that thinking is conscious.
Introspection may also seem to support a tie between *consciousness and intentional action*, since we're aware of our own actions *as being intentional* only when we're aware of the relevant intentions.

But *introspection is limited to conscious states*. So it can't reveal a tie those states have with rationality or intentional action *that nonconscious states fail to have*.

Since first-person access can't compare conscious and nonconscious occurrences, we can determine only *indirectly* what functionality consciousness might *add*.

And various folk observations suggest that consciousness adds little functionality. *Thinking* is often rational without its being conscious, and *behavior* is sometimes rational even when none of the mental processes it results from are conscious.

We sometimes solve problems and work out plans *rationally but not consciously*—as when things “just come to us,” i.e., when they come to us *as a result of rational thinking that isn’t conscious*.

Also, much *everyday behavior* is rationally keyed to goals even when the antecedent thoughts and volitions are not conscious.
Even when we **correct or adjust** our reasoning, conscious monitoring of it seldom figures; most often it *just seems that we come to see things more clearly*.

Thus it's relatively rare that we adjust reasoning by consciously rehearsing the steps—and when we do, that process is typically *awkward and slow*.

There is confirmation of this in findings of Ap Dijksterhuis and colleagues (2006; see also Bargh 2002) that deliberating about complex consumer choices—both in and outside of the lab—yields *better results when that deliberating is not conscious*.

Armstrong urges that “if our mind is to work purposively … we must have awareness of our minds” (163):

Only by being aware of our “current mental state … can we adjust mental behavior to mental circumstance”; “[o]nly if we do become so aware we will we know what to do [i.e., think] next” (327).

This suggests an **observational picture**, on which we **survey** our mental states—somewhat as we do with physical objects.

But we seldom if ever do that; our mental processing typically relies solely on **causal interactions among the first-order states**.
This points to a compelling *theoretical reason* to expect that thinking and planning would often—indeed typically—be rational *wholly independently of being conscious*.

The rationality of thoughts and desires is solely a matter of *connections among the intentional contents* of the relevant states. Nothing else figures in whether thinking and planning are rational.

And intentional states, such as thoughts and desires, *interact causally in ways that reflect their intentional content*.

Indeed, on many (though not all) theories of intentional content, *a state’s content is at least partly a matter of that state’s causal connections—actual and potential—with other relevant mental states* (and with relevant stimuli and behavior).

Only *partial* dependence is needed here.

So a state will have the content, e.g., *that it’s raining only if it has suitable causal connections—actual and potential—with other relevant thoughts and desires*.

Even “atomic” theories of content (e.g., Fodor 1987) agree that *causal potential must in some way track content*. 

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Given this tie between intentional content and causal potential, thoughts and desires will tend to cause and be caused by other thoughts and desires with which they have rational ties. So those rational causal ties will tend to occur independently of whether those thoughts and desires are conscious. So even when thinking is conscious, its being conscious will contribute little if anything to its rationality, since rationality depends not its being conscious, but on the intentional content of the constituent states—and hence their causal potential.

One can report only one’s conscious states. So perhaps a function of a state’s being conscious is that one can report it to others (Chris Gauker, personal communication 4/6/07). But there is no added functionality to reporting one’s thought or intention—as against simply expressing those states by saying that p or saying that one will do a. What we can call psychological ascent (the move from asserting \( \top p \) to the indirect-discourse report, \( \top \) I think that \( p \) ) buys no more in communicative potential than does semantic ascent (going from \( \top p \) to \( \top \) It’s true that \( p \)) —Quine 1960 in cognitive value.
Rationality is often held to have to do with reasons; if I have no reason to think something, thinking it fails in that way to be rational.

A reason is some thought or belief one has (or could have), which rationalizes another thought or desire (Davidson 1963).

It’s my reason if I have the thought or belief, and it’s simply a reason if it’s just a thought or belief I could have.

But a thought can be one’s reason—one can have that thought or belief and it can rationalize other states and processes—without that thought’s being conscious.

II. Consciousness and Intentional Action

Similar considerations apply to the putative tie between consciousness and intentional action—actions that stem from one’s own prior volitions.

The potential of volitions to issue in action tracks the content of those volitions, and so is a matter only of whatever causal potential that goes with that content—individually of whether those volitions are conscious.
Volitions, like other mental states, need not occur consciously: An action is intentional if it's initiated by a volition—and is in that way under one's control—\textit{even if the volition itself is not conscious}. (One might still see that it's intentional.)

Acting intentionally does require that one perceive environmental objects—but that doesn't mean the volitions are conscious.

Indeed, the perceiving itself might be \textit{subliminal}—and so fail to be conscious.

All that to one side, even when intentions are conscious, \textit{their being conscious may play no role in the producing of actions}.

This is confirmed by the well-known experimental work of \textit{Benjamin Libet} (1985; Libet, Gleason, and Wright 1983), replicated and refined by \textit{Patrick Haggard} (1999; Haggard and Eimer 1999; Haggard, Newman, and Magno 1999; see also Kornhuber and Deecke 1975, and Deecke, Grözinger, and Kornhuber 1976).

Those results show that, when subjects consciously decide to perform a simple action, the neural event (readiness potential) that initiates the action \textit{occurs prior to any conscious volition}.

The best interpretation of these results require distinguishing a volition's \textit{simply occurring} from its \textit{being conscious}. 
Subjects are conscious of volitions only after the relevant readiness potential.

So we can identify that readiness potential with the volition—**independent of that volition’s being conscious**—
and see the Libet-Haggard results as indicating **a lag between the initial onset of the volition and the volition’s becoming conscious**.

It’s likely that this holds for all intentional states—though others are difficult to test.

If so, the thoughts in rational thinking and executive function also occur prior to—and independently of—their being conscious.

These conclusions shed light on other proposals about the **function of volitions’ being conscious**.

Daniel Wegner (2003) has urged that the occurrence of a conscious volition gives one information (albeit fallible) **that one is the author of some piece of behavior**.

He concludes that conscious volitions have the **function** of providing that information.

Wegner assumes that **both the conscious volition and the corresponding action have a single cause—which isn’t itself a volition**.

So, he urges, (conscious) volitions are the mind’s trick to indicate agency of actions.
- But it's far more likely that a volition, which is in itself not conscious, causes both the corresponding action and the consciousness of that volition.

- The Libet-Haggard findings support this, since they suggest that volitions initially aren't conscious, and then come to be.

- Also, even nonconscious volitions provide information about the authorship of behavior; though not conscious, *it is still psychological information*. What function is added by its being conscious?

- So *carrying that information can’t be the function of volitions’ being conscious*.

- There may be distinctive classes of behaviors that occur (in humans or even in general) *only when the relevant volitions or desires are conscious*.

- But *by itself* that does not show that the consciousness of such intentions and desires has the function of enabling those behaviors to occur.

- Rather, it may be—as in the case just argued—that the consciousness and the behaviors are *jointly caused*: that the very factors that result in those behaviors *also* result in the volitions’ and desires’ coming to be conscious.
Larry Jacoby's (1991; Debner and Jacoby 1994; Jacoby et al 1993, 1994) exclusion task is sometimes held to support a tie between consciousness and intentional action.

Subjects are presented with a word, say, 'reason', and asked to complete a word stem, say 'rea--', with any word other than the presented word.

When the word is presented for 500 ms, subjects see it consciously and mainly succeed in following the instruction; when it's presented for only 50 ms, they report seeing no word—but tend to complete the stem with the word that was presented.

So subjects intentionally exclude a word only when they consciously see it.

But that’s arguably not because intentional action must be conscious:

Subjects are instructed not to complete the stem with a word they see. But when they don't see it consciously, they aren’t conscious of seeing it—so they think that they don’t see it.

So it’s not that consciousness is needed here for intentional action. Rather, in the 50-ms case, subjects trying to follow the instructions think they don’t see the word (though it still primes their response).
Relying on phenomenological appearances encourages assimilating thoughts and volitions to our consciousness of those thoughts or volitions.

And since thoughts and volitions do have functionality, one might then just assume that our consciousness of them also does.

But the two are distinct, as we see from the Libet-Haggard findings, among others.

So we must distinguish a state from our consciousness of it—and its functionality from that of our consciousness of it.

Also: We needn’t explain phenomenology by appeal to phenomenology itself.

III. Higher-Order States and Executive Control

The Libet-Haggard findings—which show that a state’s being conscious occurs later than, and so independently of, the state itself—provides evidence for an increasingly prevalent type of theory about what it is for a mental state to be conscious.

On these “higher-order” theories, a state’s being conscious consists in one’s being conscious of it in some suitable way.
This core idea is compelling, since a state of which one is in no way conscious does not intuitively count as a conscious state.

I’ll call this the Transitivity Principle (TP), since it holds that one is (transitively) conscious of all one’s conscious states.

Higher-order theories all endorse TP, but differ about how TP is implemented.

I’ve argued elsewhere (e.g., 2005) that TP is implemented by distinct higher-order thoughts (HOTs) about one's mental states—in particular, thoughts to the effect that one is in the state in question.

This fits well with the foregoing results: States occur independently of the distinct HOTs in virtue of which they're conscious.

So we can explain volitions’ coming to be conscious after they first occur because their being conscious is a matter of a distinct HOT, which can occur very slightly after the volition it is about.

Also, exclusion-task subjects exclude only words they see consciously because it’s only those words they think they’ve seen—and if subjects thought they’d seen the words, the seeing would be conscious.
Executive function is often associated with higher-order processing (e.g., Norman and Shallice 1986, Shallice 1988), since executive function involves adjusting and fine tuning one's behavior, and hence adjusting of the relevant first-order intentions and desires.

But such adjusting is often just a matter of ironing out conflicts among competing or dissonant first-order desires and beliefs.

And that can result simply from causal interactions among the first-order states: Thoughts and desires all have causal ties with other first-order states, ties that track content; those with stronger ties win out.

Moreover, even if higher-order states do occur in executive processing, they may well not be the kind needed for the first-order states to be conscious.

A state's being conscious requires that one be aware that one is in that state (TP).

But the higher-order states that may sometimes occur in executive processing may not have the right content for that: Such processing might simply register conflict or dissonance among states and indicate possible adjustments— but without thereby representing that one is in those states.
Similar considerations apply to a compelling proposal by Edmund Rolls (2004, 2005) of a type of HOT theory, on which the HOTs enable one to correct errors in multistep chains of reasoning.

A mistaken step in such a chain, Rolls argues, can be located only by means of HOTs about the steps in that chain.

If so, HOTs—and hence the consciousness of mental states—have a correcting function that links them to rationality.

Such correcting would, Rolls argues, require HOTs to represent the syntactic ties among steps in such chains.

But if some step in a chain of reasoning is erroneous, it’s likely it will result in some first-order cognitive dissonance.

And that dissonance will, by itself, serve to locate the error, and so will make possible the adjusting of the chain of reasoning at the right point.

Again, interactions just among first-order states can iron out errors independently of higher-order monitoring, and hence independently of consciousness.

The Dijksterhuis finding, that multistep deliberating is better nonconscious than conscious, confirms this conclusion.
Indeed, the *tie between content and causation* very likely explains both the Dijksterhuis results and the folk-psychological observation that adjusting reasoning by consciously rehearsing the steps is *rare*—and *slow*.

Causal interactions among first-order states doubtless *operate faster and more accurately* than higher-order monitoring in ensuring rational connections among thoughts and desires and adjusting reasoning, which requires both *extra steps* and an *additional kind of mental processing*.

An example of executive function that isn’t conscious may well occur in *hypnosis*.

Actions performed under post-hypnotic suggestion involve no *awareness of an intention to perform them*, nor *any conscious sense of being voluntary* (Hilgard 1977; Spanos 1986; Oakley 1999).

Also, subjects are unaware of the planning these actions require (Hilgard 1977; Sheehan and McConkey 1982; Spanos 1986; Oakley 1999).

Zoltán Dienes and Josef Perner (2007) explain all this as executive function that occurs without suitable HOTs: *Hypnosis results in nonconscious executive function*.
Fred Dretske urges that, on higher-order theories, consciousness “has no function” (1995, 117)—or nearly none (182, n. 15).

Nearly because, as Dretske acknowledges, the higher-order states will themselves have some function, albeit fairly minimal.

Dretske sees this as a shortcoming of higher-order theories, which he seeks to avoid by holding, instead, that a state is conscious if one is conscious of something in virtue of being in that state.

Given that theory, the function Dretske ascribes to consciousness is simply the function of being conscious of things.

Dretske replies that a case of perceiving is conscious only if one can cite it as a justifying reason for doing something (2006), but citing it requires being conscious of it.
IV. Why Intentional States Are Ever Conscious

- If a state’s being conscious makes little or no contribution to rationality, volition, or executive control, an intentional state’s being conscious may well have no significant, stable function.
- So such functions can’t then help explain what evolutionary selection pressures might have led to creatures whose mental states are sometimes or often conscious.

- But the HOT hypothesis suggests another way to explain why some mental states do come to be conscious—a way that makes no appeal to evolutionary selection.
- Time constraints require giving only a very schematic version of this explanation (see Rosenthal, 2005, ch. 10, §v; and forthcoming, §iv).
- Also, my explanation today won’t apply to qualitative states; they come to be conscious in a different way (see Rosenthal, 2005, ch. 7, §vi).
- Consider creatures that can speak, and can, in addition, describe their own and others’ speech acts in semantic terms.
Those creatures could readily extend the semantic categories they apply to speech acts to apply also to inner states—folk-theoretically posited—that differentially cause various speech acts (Sellars 1956).

So such creatures would have concepts needed for HOTs about intentional states.

Still, why would such creatures come to have HOTs reasonably often—or even ever—about their intentional states?

Positing inner causes of speech acts would lead these creatures to ascribe intentional states to themselves by observing their own verbal behavior.

And any such self-ascriptions of intentional states would express thoughts about those first-order states.

But since these thoughts rely on conscious self-observation, the first-order states they are about would not be conscious—consider ascribing a thought to yourself relying just on conscious self-observation.

But as our creatures gained facility at such self-ascription, they'd no longer need to take conscious note of their own behavior.

They might observe themselves, but not consciously—or just being disposed to say and do various things would cause HOTs.
The resulting HOTs would be subjectively automatic and unmediated in that they would rely neither on conscious observation nor on conscious inference.

Since the way these creatures would then be conscious of their thoughts would be subjectively unmediated, those thoughts would be conscious.

HOTs about qualitative states would arise without language. And the mental states of nonlinguistic creatures may well be conscious only in respect of the qualitative character of those states.

But that's beyond the scope of this talk.

Summary

The higher-order states in virtue of which intentional states are conscious have no essential tie to rational thinking, intentional action, executive function, or the correcting of multistep chains of reasoning.

But we can—individually of any such functionality and of evolutionary selection pressures—explain why those higher-order states do very often occur.
References


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