



A Theory of Qualitative Consciousness

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OVERVIEW

- I. The Problem of Consciousness
- II. A Theory of Consciousness
- III. Qualitative Consciousness: The Problem
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I. The Problem of Consciousness

- A crucial preliminary—
The term 'conscious' applies to three distinct phenomena:
- A creature's being awake and sentient ("creature consciousness");
 - A creature's being conscious of (or, equivalently, aware of) something ("transitive consciousness"); and
 - A creature's mental states' being conscious ("state consciousness").

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- Understanding creature consciousness involves explaining the difference between a creature's being conscious and its not being conscious (asleep, etc.).
- That's at bottom a biological matter (Tononi and Cirelli, 2003; Hill and Tononi, 2005; Laureys, 2005).
- A creature's being transitively conscious of something consists in its seeing, hearing, or in some other way sensing that thing, or in the creature's having a thought about that thing as being present (to rule out objects distant in time or place).
- So transitive consciousness is a thought or a sensation's representing something.

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➤ That leaves state consciousness:
We need here to explain what it is in virtue of which some mental states are conscious—

i.e., how conscious states differ from mental states that aren't conscious.

➤ This is of interest only if some mental states do occur without being conscious.

➤ This application of 'conscious' in English, occurring first in the 17th C. (O.E.D.), is extremely uncommon until late 19th C.—probably because only then do many authors acknowledge explicitly that not all mental states are conscious.

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➤ It's widely acknowledged that thoughts, desires, doubts, expectations, hopes, preferences, etc. (so-called intentional states) all occur without being conscious.

➤ But many still insist that sensations, perceptions, and even affective states (emotions)—states with mental qualities—cannot fail to be conscious.

➤ This idea is common in the philosophical literature (Nagel, 1974; Block, 1995, 2005, 2007; Levine, 2001; Chalmers 1996)—

though it's common elsewhere as well: Even Freud held that the qualitative aspect of emotions cannot fail to be conscious (e.g., S.E. XIV, 177-8; XIX, 22-3).

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- One reason it's sometimes held that qualitative states can't occur without being conscious may be the close tie that creature consciousness and transitive consciousness each has with sensing.
- Sentience is required for creature consciousness.
- Also, sensing is the more basic form of transitive consciousness:
Sentience occurs without thoughts;
and we think of being conscious of things in the first instance in terms of sensing (which may explain why thoughts also need to be about things as being present).

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- But the close tie creature consciousness and transitive consciousness each has with sensing cannot support the claim that sensing must be conscious.
- State, creature, and transitive consciousness are distinct phenomena; so we can't—without some question-begging assumption—infer from one to another.
- Some have held that it's unclear what nonconscious mental qualities could be. So in §II, I'll present an account of mental qualities that's altogether independent of those qualities' occurring consciously.
- In any case, qualitative states that aren't conscious do in fact plainly occur.

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- Some evidence for nonconscious qualitative states comes from everyday life:
 - intermittently felt headaches, pains
 - peripheral vision, subliminal perceiving
- There's also strong experimental evidence:
 - masked priming, blindsight, change blindness.
- Some insist that the states in these cases are not mental—and so not qualitative.
- But that's arbitrary and ad hoc: We use the very same terms for mental qualities to distinguish among these nonconscious states as we use to describe conscious qualitative states.

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- So we can conclude for now that both intentional and qualitative states do occur without being conscious.
(I'll say more about this in §§II-III.)
- In what way, then, do the conscious cases differ from those that are not conscious?
- Plainly, we count no state as conscious if the individual that's in that state is not transitively conscious of it.
(I'll refine this formulation a bit in §II.)
- So one's being transitively conscious of a state is a necessary condition for that state to be conscious.
- I'll call this the Transitivity Principle (TP).

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- TP tells us that, even though transitively conscious states often do not exhibit state consciousness, state consciousness is a special case of transitive consciousness (as the biological is of the physical).
- Is TP circular (e.g., Goldman 1993, 366)?
- No: Mental states can all occur without being conscious.
So we understand transitive consciousness—i.e., sensing and having a thought about something (as being present)—independently of what it is for the state in question to be a conscious state.

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13th A&P Workshop, 25 May 2008

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- TP provides a necessary condition for state consciousness, not a sufficient condition.
- One might be conscious of one's mental states by way of inference or observation.
- And a state is not conscious if I'm conscious of it simply because, e.g.,
 - you tell me and I believe you, or
 - I observe or theorize about myself.
- But if we can determine what way of being transitively conscious of a mental state results in its being conscious, that will give us a condition for state consciousness that is both necessary and sufficient.

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- That's the task of the next section (§II), "A Theory of Consciousness."
- In §III, then, I'll apply the theory of §II to the special case of conscious qualitative states, and argue that certain alleged problems about conscious qualitative states either are illusory or can be met by this theory.
- With more time, I'd have also sketched how the theory can explain:
 - (1) Why our mental states are so often conscious, and
 - (2) Why consciousness typically represents our mental states accurately.

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II. A Theory of Consciousness

- We want to specify just how it is that we are transitively conscious of our mental states when those states are conscious.
- Recall that sensing is, intuitively, the basic type of transitive consciousness.
- Combining that with TP suggests that the way we are transitively conscious of our conscious states may be by sensing those states:
The Inner-Sense Model.

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- This Inner-Sense model (in effect, *higher-order sensing*) is by far the most widely adopted in the *traditional* philosophical literature:

Locke's "internal sense" (Essay II, I, 4); *Kant* uses 'inner sense' ("der innere Sinn" [K.d.r.V., A22/B37]); *Aristotle* (DA Γ2, 425b12-20; EN IX, 9, 1170a29-a32; Met. Λ9, 1074b35-6); and following him *Brentano* (Psychology from an Empirical Standpoint, 128ff.). Among contemporaries: *David Armstrong*, *William Lycan*, and in a modified way *Peter Carruthers*.

- But the view faces *intractable difficulties*.
- As an initial pass at what's wrong:
There's *no organ* for the inner sense.
- But that's not decisive, since *it's unclear what counts as an organ*. Perhaps some brain area counts as an organ.

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- Still, the concern about an organ points toward a difficulty that is decisive.
- We *individuate* the senses in two ways:
 - (1) by way of sense organs—but also
 - (2) by way of *sensory modalities*.
- And *there is no sensory modality that an inner sense could have*.
- That's because each modality has a *distinctive range of qualitative properties* that is special to it.
- And there's *no suitable range of qualitative properties* by way of which a higher-order inner sense could operate.

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- For one thing, the qualitative properties distinctive of each modality are keyed to the perceptible properties to which that modality enables perceptual access.

(This "keying" is important; more in moment.)

- And the mental properties that a higher-order sense would have to discern are far too diverse for any single range of qualities to access them:

Even leaving aside intentional properties, a higher-order sense would need to sense the distinctive qualitative properties of ALL the different sense modalities.

Pace Thomas, there is no "common sense."

- Aristotle's common sensibles (DA B6, 418a16-19) are perceptible properties that are accessible by more than one modality—e.g., spatial and temporal properties.

- Different modalities do access the same spatial and temporal properties; but that doesn't mean the corresponding mental qualities are the same across modalities.

- Aristotle sees spatial mental qualities as the same across modalities, since he sees mental qualities as the same as accessed physical properties (e.g., DA B5 418a4, 11 423b31, 12 424a18, Γ2 425b23). But mental qualities are distinct from perceptible properties.

- Nor could the higher-order sense simply duplicate the first-order qualities (a move Aristotle famously considers [DA Γ2]).
- Consider any single sense—say, vision.
- The higher-order qualities couldn't be the same as first-order visual qualities, since those first-order visual qualities are keyed to sensing physical color, and not also to sensing mental color qualities (pace Aristotle, e.g., DA B2, 11, 12, Γ2).
- And we know of no higher-order mental qualities for inner sense to operate with.
- So inner sense fails.

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- **A brief, but crucial digression:**
- The foregoing argument relies in part on the idea that each range of mental qualities is "keyed" to a range of properties it enables us to perceive.
- What does "being keyed to" amount to?
- Each family of perceptible properties occurs in, and defines, a quality space, whose members exhibit characteristic similarities and differences—all cast in commonsense terms.
- This is a matter of a creature's ability to discriminate these properties, not of the properties' psychophysical characteristics.

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- The mental qualities that allow us to sense each range of perceptible properties also form a quality space homomorphic to the quality space of perceptible properties:
I.e., these mental qualities exhibit corresponding similarities and differences.
- This correspondence of the quality spaces of perceptible properties and mental qualities lets us individuate the qualities: Mental red, e.g., is that mental property which, by occupying the same position in its quality space as physical red occupies in its quality space, allows us to be perceptually responsive to physical red.

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This CIE graph locates all chromaticities (saturation and hue)—hence all corresponding color sensations.

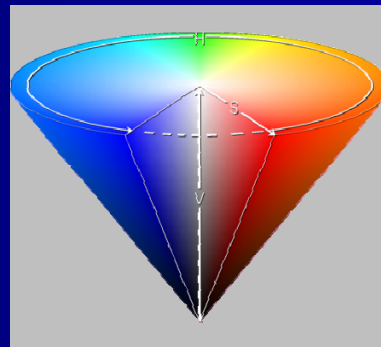
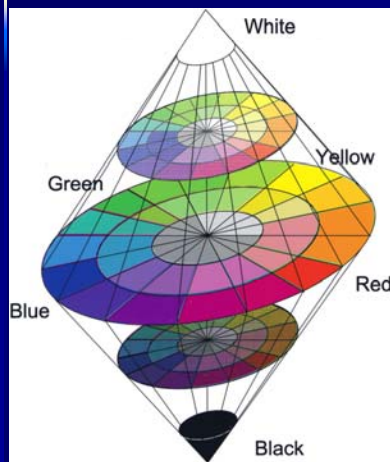
Monochromatic hues on the outside (in nm); less saturated hues inside the spectral locus.

(Commission Internationale d’Éclairage)

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For locating color sensations in respect of brightness as well as hue and saturation, we need a 3D color solid; this HSV color

cone permits more intuitive 3D locating.



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- This “quality space” account of mental qualities (Rosenthal 2005, chs. 5-7; cf. Sellars 1956/1963, Shoemaker 1975 [Lewis 1972], Meehan 2006) will figure in the next section.
- But to resume the overall argument:
One is transitively conscious of something either when one senses that thing or when one has a thought about it as being present.
- Since inner sense fails, it must be that we are conscious of our conscious mental states by having thoughts about them as being present.
- I’ll call these thoughts higher-order thoughts (HOTs).
- What more can we say about these HOTs?

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- Recall that being conscious of one's own mental state won't result in that state's being conscious if one is conscious of the state
 - by (consciously) applying a theory,
 - by way of (conscious) inference, or
 - by observing oneself.
- Consciously applying a theory involves conscious inference.
- So the occurrence of a HOT must be independent of any conscious inference and of any self-observation.

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- We're typically unaware of any such HOTs.
- But the theory predicts that:
We wouldn't be conscious of them unless we had third-order thoughts about them.
- And we can assume that these are rare.
- We know about HOTs not from introspection or phenomenology,
but because they are theoretical posits.
- HOTs are themselves conscious only in the special case in which we're introspectively conscious of our mental states:
i.e., conscious of them in a deliberate, attentively focused, "self-conscious" way.

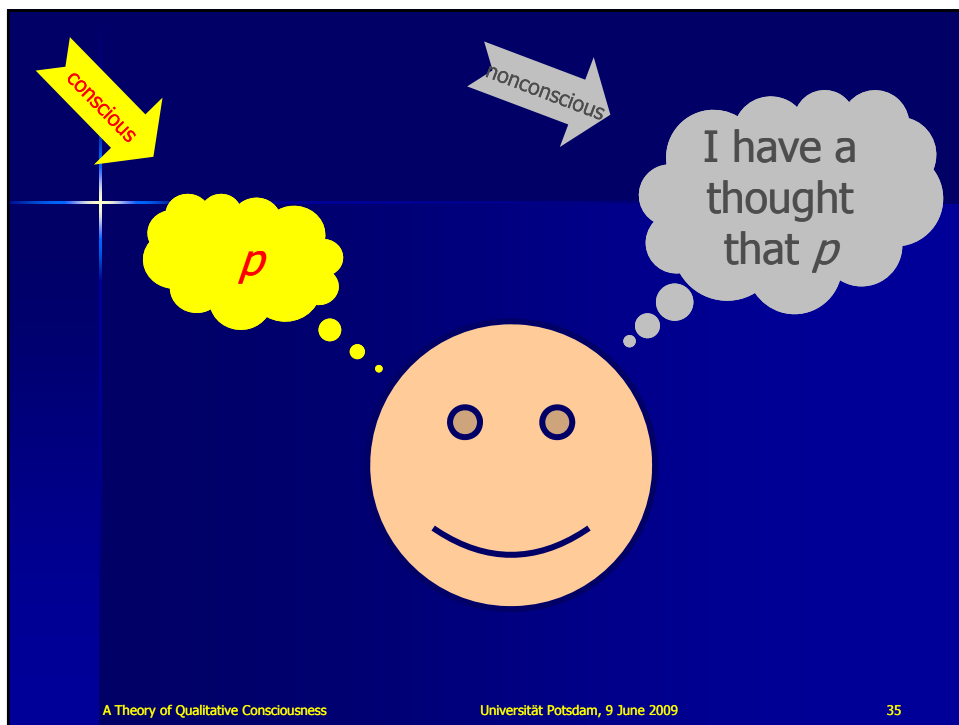
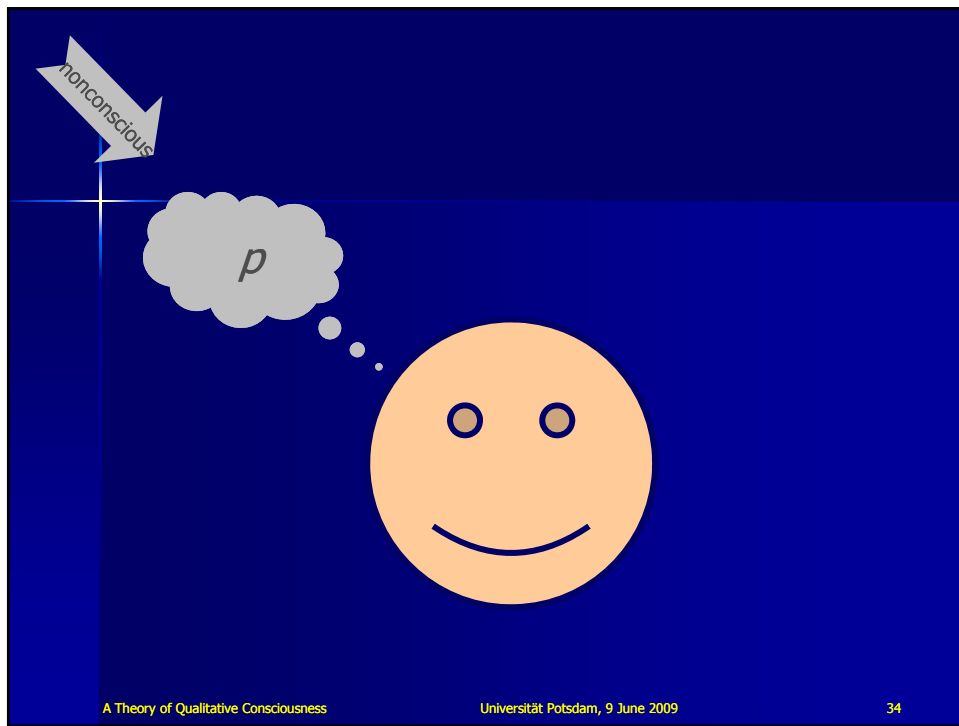
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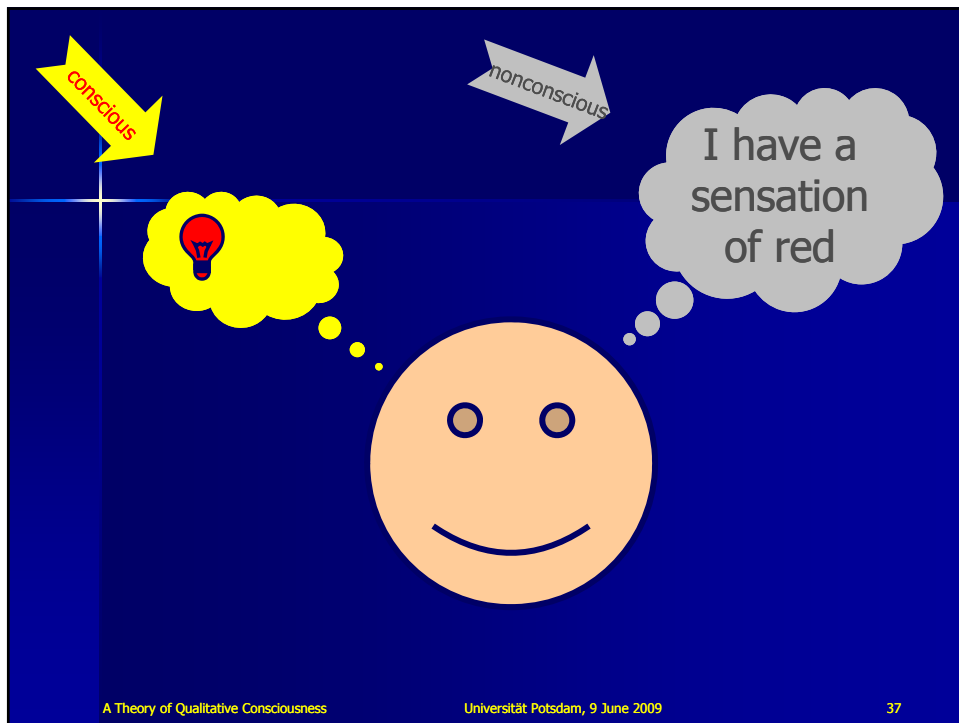
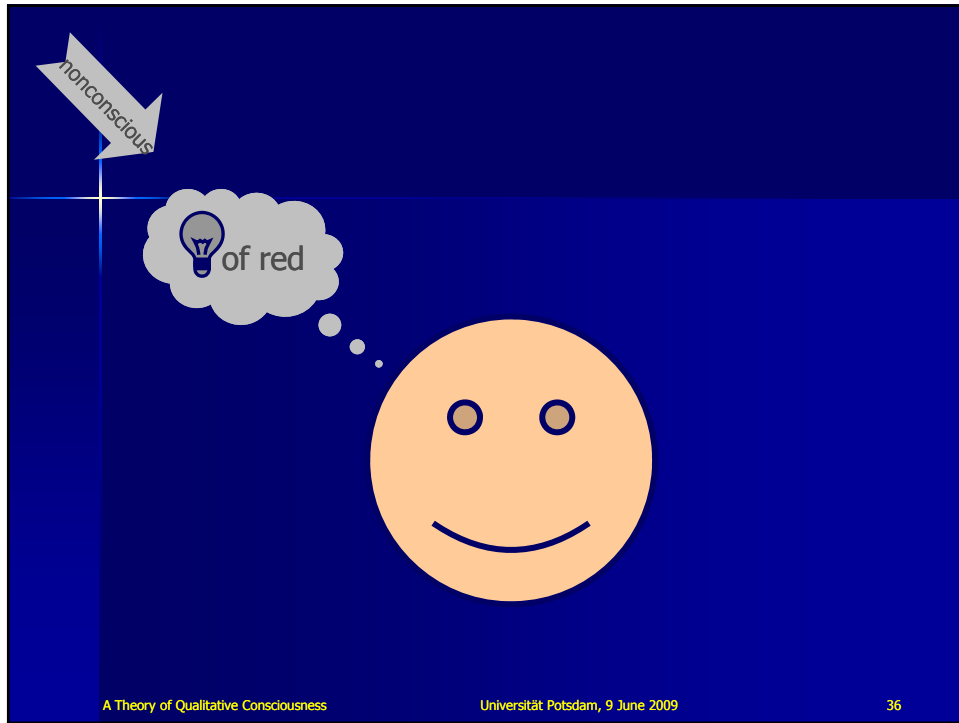
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- The term 'thought' is sometimes used in a generic way to apply to any kind of intentional state—
e.g., hoping, desiring, expecting, anticipating, doubting, wondering, and the like—
but the term 'thought' is also sometimes used, more narrowly, to apply just to assertoric intentional states.
- And HOTs must be assertoric:
Wondering about something or having doubts about it, e.g., do not result in one's being conscious of that thing.

- A state is conscious only if one is in some way conscious of oneself as being in that state (this is the more refined version of TP).
- That fixes the content of the HOTs:
They are thoughts to the effect that one is, oneself, in the state in question.
- Having that content ensures that HOTs satisfy the condition that, for a thought to make one conscious of something, that thought must be about that thing as being present.
- Graphically, then,





- Nonlinguistic animals and human infants (who also lack language) very likely have some HOTs—though fewer and far less specific than those of adult humans.
- For one thing, *HOTs needn't be all that sophisticated conceptually.*
- Though HOTs describe target states in terms that *we* count as mental, they *need not involve any concept of mind—nor of kinds of mental state.*
- Nor need they involve any concept of the *self* beyond that which figures simply in *distinguishing conceptually between oneself and everything else.*

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III. Qualitative Consciousness: The Problem

- As argued earlier, qualitative states, such as sensations, are not always conscious.
- When a qualitative state is conscious, there is *something it's like for one to be in that state;*
but when it isn't conscious, there is *nothing it's like for one to be in the state.*

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- But HOTs are purely intentional states—
i.e., they have no qualitative properties.
- So how can simply having a HOT
make the difference between
there being something it's like for one
to be in a qualitative state
and there being nothing it's like for one?
- How can the "pale cast of thought"
(Hamlet II, i) result in the vivid, "lighted up"
qualitative richness of our conscious
sensations, feelings, and perceptions?
- That's the main challenge for the HOT
theory about qualitative consciousness.
- Recall: We can't meet this by switching
to inner sense—since that doesn't work.

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- This problem seems intuitively compelling.
But it turns out not to be at all clear how
to state the problem in a precise way.
- As a first pass at stating it: How can
HOTs cause there to be something it's
like for one to be in a qualitative state?
- But, as Hume noted, anything can cause—
i.e., causally result in—anything.
So why should there be any difficulty in
this case?
Why should it be in any way problematic
that a HOT might cause there to be
something that it's like for one to be in
conscious qualitative states?

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- But causing is not the right notion here.
- For one thing, it doesn't reflect the apparent intuitive difficulty.
- More important, the HOT model does not claim that HOTs cause there to be something it's like for one to be in qualitative states, but rather that HOTs constitute there being something it's like for one.
- Still, as with causing, anything can constitute anything:
Thus, e.g., submicroscopic particles constitute macroscopic objects, and particles (or waves) constitute light.

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- Why think, then, that HOTs can't constitute qualitative consciousness?
- One reason might be that it doesn't seem, *from a first-person point of view*, that HOTs do constitute qualitative consciousness:
We aren't conscious of HOTs' resulting in our qualitative states' "lighting up."
- But on the HOT model we wouldn't expect to be conscious of HOTs' doing that.
HOTs are seldom themselves conscious thoughts; so subjectively it won't usually seem that they do anything at all.

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- And the HOT model to one side, we shouldn't expect that we would ever be conscious of how qualitative consciousness arises, nor of what constitutes it.
- It's common for psychologists to note that we typically aren't conscious of mental processes—the processes by way of which mental states arise (e.g., Karl Lashley: "No activity of the mind is ever conscious" [1958]).
- And we have no reason to think that what constitutes or leads to consciousness is an exception to that observation.

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- Perhaps, then, the problem is that it's not a priori or conceptually obvious—i.e., not independent of experience—how HOTs could constitute qualitative consciousness.
- That's what animates the idea that there's an "explanatory gap" (Joseph Levine 2001) or a "Hard Problem" (David Chalmers 1996): It's not a priori or conceptually obvious how brain functioning could constitute conscious qualitative states (Chalmers and Frank Jackson 2001).
- But we seldom—if ever—understand a priori or conceptually how anything is constituted; for that we always need a suitable theory.

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- Sellars held that mental qualities are “ultimately homogeneous” (Science, Perception and Reality, 35; disjunctive, in Goodman’s 1951 term), in that any part of something that’s mentally red is itself mentally red.
- And since neural properties are not ultimately homogeneous, perhaps mental qualities aren’t physical after all.
- But once we distinguish, as Sellars did not, between mental qualities and their being conscious, we see that homogeneity is a mere appearance of mental qualities, due to our being conscious of them solely in respect of their quality-space locations.

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- Some insist that we can access the phenomenological only by consciousness.
- Conscious mental qualities would then be a closed realm, and the reality of phenomenological appearances would consist solely in the appearances they present.
- Then no theory could explain conscious qualities; an explanatory gap would result.
- But we do know about mental qualities independently of consciousness—as we saw from the §II quality space account.
- Still, that quality space theory deals only with nonconscious mental qualities; what about qualities when they’re conscious?

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IV. Qualitative Consciousness: The Explanation

- The quality space account gives us the theoretical resources to explain what mental qualities are—but *not by itself* the theoretical resources to explain what it is for those qualities to be conscious.
- Does adding *the HOT model* provide a suitable framework for explaining *the consciousness of some mental qualities?*

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- Here is a reason to think that adding the HOT hypothesis *does* give us the needed theoretical framework.
- Consider *learning to taste wines*.
- Sometimes just learning *new words*—words with no antecedent associations—for distinct gustatory and olfactory mental qualities *results in one's actually coming to be conscious of those qualities as distinct*.
- Similarly with learning *the terms* 'auditory experience of an oboe' and 'auditory experience of a clarinet'—as against the indiscriminate term 'auditory experience of some woodwind'.
- What *mechanism* could be operative here? There are only two possibilities.

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- One possibility is that the new words actually result in *new, distinct mental qualities* coming to occur.
- That would be the only possibility *if mental qualities could only occur consciously*:
Since learning the new words *does* sometimes result in new *conscious* qualities,
learning the new words would then *have to result in the new qualities themselves*.
- But as I've argued, the insistence that qualities can only occur consciously is not only unfounded, but mistaken.

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- People do sometimes come with repeated exposure to have new, more finely differentiated mental qualities—so-called *perceptual learning*.
- But perceptual learning is *gradual*, and the effect here is *dramatic*, typically occurring *right after learning the words*.
- So the only reasonable hypothesis is that learning the new words results somehow in *our coming to be conscious in new ways of qualities that already occur*.
- This is *testable*—e.g., by seeing whether there are *different priming effects* before and after subjects learn the new words.

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- Still: How *could* it be that simply learning the new words has even that modest effect?
- Learning new words means coming to have *thoughts with new contents*— in this case, *contents that pertain to the very qualities that come to be conscious*.
- I.e., we come to have *thoughts that one has states with those very qualities*.
- So it turns out that having new HOTs does actually *result, in these cases, in there coming to be something new that it's like for one to be in the relevant qualitative states*.

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- This seldom happens with adults— presumably because adults already have in place a large vocabulary and repertoire of intentional contents.
- But we can assume something like this often or even always happens *with children*, though it's unrecalled later on.
- Since HOTs can *in some cases* result in there being something it's like for one to be in conscious qualitative states, there can be *no theoretical difficulty* in the view that that's how qualitative states may come to be conscious in all cases.

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- A challenge: Might the new words pertain just to the perceptible properties, and not to the corresponding mental qualities?
- Then the new concepts would figure not in HOTs about qualitative states, but in thoughts about perceived objects.
- But in these cases of learning words for new qualities, adults typically focus introspectively on the mental qualities of their experiences. And all we need to see that HOTs can have this effect is a sample of such cases.

- One might still insist that there's nothing for a mental quality to be unless it's conscious—unless it's "lighted up."
- Recall: Mental qualities occupy quality spaces that correspond to those of the perceptible physical properties that they allow us to sense (and thereby represent).
- So we can individuate mental qualities by their position in the relevant quality space. (Similarly with their neural correlates.)
- And that way of individuating is wholly independent of whether the states that have those qualities are conscious.

- A crucial feature of *any* higher-order theory of consciousness is that *the higher-order content is distinct from mental properties it represents*.
- So the higher-order state (here a HOT) can *misrepresent (i.e., misdescribe)* that target, or *even occur without it*. (The difference between these two is arbitrary.)
- One common example: HOTs can lack fineness of grain (e.g., of shade or shape).
- Also *dental fear*: HOTs can misrepresent fear and a sensation of vibration as pain.
- HOTs can result in *confabulation* (Nisbett and Wilson 1977); maybe voices in schizophrenia.

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- An apparent difficulty: There are *too many qualities for us to have distinct concepts for each*, and so too many *fine-grained differences* among them to capture just conceptually.
- But we think about mental qualities by extrapolating from concepts for *physical objects with corresponding perceptible properties*—as banana vs. lemon yellow.
- And we also use *comparative concepts*—*lighter red, deeper red*, etc.
- So HOTs can also *extrapolate* from concepts for perceptible properties, and can also recruit *comparative* concepts.

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- Both these commonsense moves reflect the idea that mental qualities are fixed by their positions in the relevant quality spaces.
- The appeal to banana yellow as against lemon yellow fixes a position in the space of mental qualities by appeal to a position in the corresponding space of perceptible properties.
- And comparative concepts (lighter red, etc.) then simply adjust those positions in the relevant quality space.
- So both these commonsense moves help confirm the quality space theory of §II.

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- A related challenge:
In sensing things, we can distinguish more fine-grained differences among qualities than we can recall, identify, or recognize.
- This is experimentally very robust:
- We can distinguish in far finer grain two qualities presented together than we can identify or recollect two qualities presented one after the other (see Raffman 1995 for references).

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- But why would there be any difference between qualities presented together or in succession if the qualities are conscious simply in virtue of accompanying HOTS?
- If the same HOTS figure in both cases, we should be aware of the qualities in the two kinds of case with the same accuracy and fineness of grain.

Diana Raffman has deployed this “memory constraint” against representationalist theories of mental qualities; Thomas Metzinger (2003) adapted it as an objection to HOTS.

- But, so far from being a difficulty, the HOT model actually predicts this phenomenon.
- The concepts of mental qualities that figure in HOTS trade on those concepts’ locations in the relevant quality space.
- So we're conscious of mental qualities in respect of their relational, comparative, properties, not in respect of any “intrinsic” properties.
- So qualities are conscious in respect of those relational, comparative properties.
- And we're conscious of more fine-grained differences when qualities are concurrent, which enables us to compare them online.

Summary

- We can understand what it is for a mental state to be conscious by positing HOTs to the effect that one is in the state in question.
- Combining that HOT theory with the quality-space theory of what is for a property to be a mental quality allows us to explain qualitative consciousness in a way that fits well with commonsense intuitions and explains various striking empirical findings.

**Thank you for
your attention**