The Scientific Evidence of Qualia Meets the Qualia that are Scientific Evidence

Abstract

The ASSC has challenged student members to encounter and respond to a number of questions, one of which is: "(Q1) What kind of experiences are qualia? Qualia are usually described as the redness of red or the painfulness of pain. While most people would agree that qualia refer to the quality of subjective experiences, it is often difficult to judge whether less sensory aspects of experiences should be taken to accompany specific qualia. In order for the concept to be useful for driving neuroscientific research, it is important to determine the fundamental conditions for an experience to count as a quale in a meaningful way. (Q2) Are there any critical experimental protocols to determine whether a certain experience counts as a quale?" For this student, it is a short walk from a request for elaboration of putative empirical method to the revealing of paradoxical behavior by scientists. The chronic intractability of a physics of qualia is not merely a problem for scientists. The problem can be shown to arise from scientists and from our implicit, inadequately examined behavioral options handed to us by our scientific forebears as underperforming conventions in respect of (a) what constitutes scientific evidence and (b) what we can do with it.

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Questions Q1 and Q2 confront a raft of presuppositions and scientific paradoxes that have kept science at bay for centuries. Consider Q1 "What kind of experiences are qualia?" Although probably unintended, this is a bit like asking "What kind of canines are dogs?" Qualia **are** the qualities of experience.[2] All experience. It's not like there are experiences of kind A that

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[2] See (Tye, 2008). The word can be used when generally drawing attention to subjective qualities of visual experience, olfactory experience, gustatory experience, auditory experience, touch experience (including haptic/pressure, temperature and so forth), motion proprioception, situational emotions, primordial emotions (thirst, hunger, etc., associated with homeostasis (Denton, 2005)), plus imagined and pathologically originated versions of all of these. A popular phrase is that "it is like something" to be in receipt of qualia (Chalmers, 1996). Coined by (Lewis, 1929), there has been a semantic battle for decades over the word, which is falling into disuse when technical specificity is an issue.

are or have qualia and experiences of kind B that do not. There are experiences. The experiences are qualities encountered from a first person perspective. There is nothing else to a first person perspective.

Figure 1 illustrates the situation. There is an intrinsic perspective from the point of view of each entity (a)-(f). Figure 1 does not claim "it to be like" anything from the perspective of each entity. The figure merely recognizes that each entity has a unique, intrinsic, unavoidable perspective on the rest of the universe, acquired merely through being a collection of persistent structure. For scientist (f), "it is like something" from that perspective. This we attribute to the action of our brain.[3] For (f), to have perception is to have experiences.[4] For (f) to be aware of X ultimately involves experiencing Xness. Q1 implies there are aspects of experience devoid of qualitative feel. This is a contradiction in terms. In that sense, Q2 also becomes meaningless, and thus we are mired in the semantic molasses of the milieu. Again.

Q2 does offer a revealing glimmer of practical clarity in an empirical science of quale kind. It involves understanding the role of the quale in a control system, and the tendency to conflate the measurement- theoretic concepts of accuracy and repeatability.[5] To illustrate, let us do some "quale science" in an ideal world. Posit an imaginary "omni-imaging" system, which delivers the real-time coordinates of every atom in a brain region, along with the electromagnetic field vectors to a spatiotemporal resolution of atto -meters and atto-seconds. In essence, there is nothing left to describe in a brain except the space it inhabits.[6] We omni-image the entire occipital region of a pair of subjects exposed to a controlled red stimulus. Both subjects report RED. We computationally contrast the images, rendering the result invariant to known/unrelated brain configuration details. Alas, in the end there is no identifiable correlation between report and brain measurement! Critical examination of the data reveals that the difference could be accounted for by the individuals having a personalized experience, which they merely report as red (figure 2). This is the "accuracy"-"repeatability" issue at work. The practical requirement of the brain-as-a-control- system-reporting-red is repeatability. Measurement accuracy is simply unnecessary. Just like a warehouse crane positioning system merely has to repeatedly access the same location X, not navigate to an internationally agreed measurement of location X, the brain "control system" has no practical need to have identical redness quale to be behaviorally consistent about a particular cognitive circumstance. This is as far as we get in a quest for clarity in a quale science via Q2.

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[3] Which we can note in passing is a collection of Figure 1(a) atoms!

[4] Furthermore, to have mere peripheral nervous system (PNS) activity does not deliver experiences. A century of physiology tells us that all experience is generated in the cranial central nervous system (CNS). The spinal cord and para-spinal ganglia do not deliver experiences, nor do the elaborate sub-mucosal and myenteric gut plexes. Experiences are actually added in the cranial end of the CNS.

[5] Accuracy contrasts measurement across instruments to a standard. Repeatability merely demands that the same stimulation of the same instrument result in the same measurement.

[6] It is interesting to realize the brain is in excess of 99.9999999999% space, depending on how you compute spatial occupancy by electrons and nucleons. The dominant feature of the brain's operation is therefore actually the spatially expressed electric and magnetic fields, not the particulate components (the atoms). Pointing out brain chemistry therefore almost completely misses the brain!

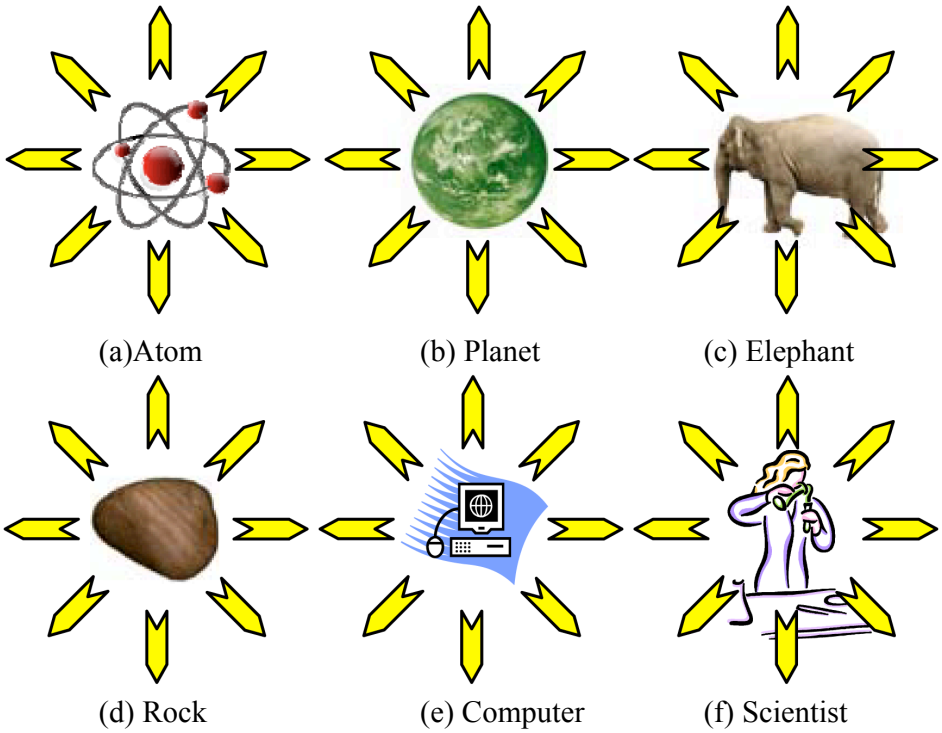
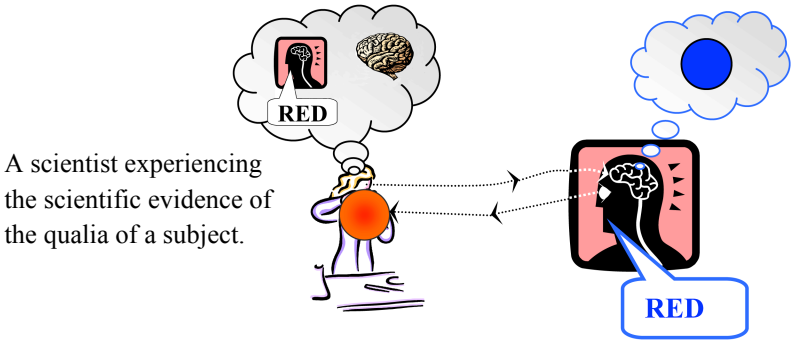


Figure 1. The intrinsic, unavoidable perspective from "the point of view of being."

The enthusiastic neural correlate of consciousness (NCC)[7] empiricist might think themselves en route to the construction of a theoretical framework explaining qualia. Brilliantly descriptive as they are, however, NCC can never do this. Consider our pair of test subjects. We implant electrode arrays in their occipital regions and inject harmless biphasic current pulses. Thus, reliably and selectively, we disable/enable reported redness. The two subjects agree RED, and a correlate appears in the "omni-imaging" data. "Yahoo!" the scientists exclaim. Replete with the most elaborate data for redness that science can deliver, the scientists still have no clue why qualia exist or what they are. No explanatory perspective exists from which it makes sense that "it be like" anything for fields and atoms to dance like they have. Merely describing the brain says nothing explanatory about qualia in general.



[7] Neural Correlates of Consciousness (Chalmers, 2000; Crick and Koch, 2003; Farber, 2005; Metzinger, 2000). The imaginary "omni-imager" produces NCC in the right circumstances.

Figure 2. A scientist doing NCC science

Reflection reveals two inescapable conclusions:

(1) No amount of NCC will ever explain the quale. Ambiguous descriptions (what) predictive of test subject reports are not explanations (why). Brain observations correlated with test subject reports explain nothing. In that sense, Q2 is revealed in the negative.
(2) Only a science, predictive of such subjective experience, can say anything scientific about the "what it is like" for figure 1 entities (a)…(e). An intuition that it is probably "not like anything" to be a rock (d), or that the mere absence of brain material in a rock (d), is a long way from an explanatory physics model of "not-like-anythingness." A proper science of quale kind requires a tester's prediction of the contrast between test subjects' reports according to a theoretical basis for quale generation, which is evidenced in brain material properties.[8] Only then can the figure 2 issue and experiments related to a real explanation of subjective experience in the brain and elsewhere in the natural world be handled.

More observation reveals unique paradoxes:

(3) Explanatory emptiness pervades our current science framework.[9] The "acceleration correlates of force" justifying Newton's second law do not explain why F=MA, only that force and acceleration correlate in the experience of the measuring scientist according to a rule F=MA. F=MA is a description, as NCC is a description. NCC fails to explain qualia for the same reason F=MA fails to explain inertia.
(4) Scientific observation is an experience of the natural world external to the observing scientist. All scientific observation is enacted via qualia as "the contents of consciousness that are scientific measurement." Being a scientist (f) in the throes of scientific observation is "like" encountering scientific evidence.[10]
(5) Qualia literally manifest the "seeing" experience, so of course you can't "see" qualia with qualia! It is an erroneous expectation. For scientist (f), it is "like"

[8] If your science framework permits you to posit a mechanism, then you can use the biological evidence of the mechanism. Initially you will not be able to predict the "absolute quale." But you do not have to. A theoretic model which predicts the outward signs of quale generation can predict relatively, that is, when two subjects will disagree. Agreement with a theoretical model, also a-priori predictive of test subject report becomes a cogent part of a scientific explanation.

[9] This means all "laws of nature" from quantum mechanics to the social sciences/psychology. "Explain" is meant in the sense of "what it is that causally necessitates that it be so."

[10] Such as the experience of interaction with scientific apparatus: for example, a volt meter. Ultimately all science is grounded in such observation. Indeed, if your science output (your "law of nature") cannot replicate the experience (the observation) in another scientist, your science is rejected.

being in the figure 2 circumstance, where the redness experience is in the test subject, and the observing scientist[11] lacks that experience.

(6) As an explanandum, the quale is unique. "Laws of Nature" are constructed to predict the qualia of the user of the law. In the science behind F=MA, you have the qualia (in the observing scientist) of both sides of the equation to correlate. A science of qualia operates at a "scientific evidence boundary condition" where you have only one side of the equation. The existing science framework only permits us to postulate models accounting for "two-sided evidence.*"*

This reveals an extraordinary and unique situation. Quale science, at the evidentiary boundary condition, lacks the normal scientific experience. Is this lack of experience a lack of evidence? We are faced with the distinction between "qualia as scientific evidence" and "scientific evidence of qualia." Exactly when are we in possession of scientific evidence of anything? An empirical scientist will tell you our method generates evidence through a behavior called objectivity, which very effectively renders the contents of a scientist's experience (scientific measurement) independent of a particular scientist. Objectivity thus implicitly demands subjective experience itself, verifying qualia in the brain of the observing scientist. Qualia have thus been "objectively but indirectly scientifically evidenced" in every scientific act ever carried out. What they have not been is scientifically measured in the sense that we normally consider as consistent with objectivity. This paints a rather awkward picture of us as scientists: In the special case of quale science, we merely have an underperforming convention in respect of what constitutes evidence, not a lack of evidence.

When we do science on our scientific evidence system, obviously we will lose "one side" of the evidence! Our whole empirical method presupposes qualia, and a scientist observer using it. This suggests we should be trying to explain our qualia, not the qualia of the test subject. Requiring extraordinary attention by scientists to ourselves, not just business as usual, fundamentally challenges our understanding of when we are in possession of evidence, and more importantly, what we can do with it. The absence of an explanation of qualia does not mean explanation is impossible. It merely means we currently do not permit ourselves to do it, or we assume that we are already doing it. To change is to permit the construction of laws of a universe/physics a-priori predictive of a scientific observer like us.[12]As a human act, this is, in principle, no less valid than any other act of regularity-construction by a scientist, and it is equally supported by empirical evidence. Our mistake is to assume that descriptions predictive of observations can explain observation (the observer). They cannot. [13]

The scientific treatment of qualia, as revealed by questions like Q1 and Q2, is scientific evidence of a problem with science, when scientists encounter a scientific evidence boundary-

[11] The empirical NCC scientist looks at a brain and sees a test subject's brain in the act of delivery of qualia in the subject, not the qualia of the test subject.

[12] In truly explaining qualia, inertia and all the other explanatory shortfalls will be accounted for as well.

[13] This mistake can also be seen as our implicit conflation of (i) scientific descriptions predictive of the appearances of the natural world and (ii) scientific descriptions of the underlying structure of the natural world. They are not necessarily the same set of descriptions. Alternatively the mistake can be couched as our assumption that scientific descriptions of the underlying natural world are impossible or invalid constructions when it is this very underlying structure which enables science (via an observer). Scientists (our qualia) are the scientific evidence of this underlying structure.

condition. Progress merely means formally recognizing the primacy of qualia as scientific evidence and updating our options for construction of scientific descriptions of the natural world (that is, what qualia are evidencing). We will remain stuck, forever describing (what) and believing we explain (why) when we don't, if we continue to only ask questions like Q1 and Q2, assuming we, scientists, are at a developmental endpoint. Why have we failed to take the necessary good hard look at ourselves? Now, there's the question.

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