

Identism Without Objective Qualia: Commentary on Crooks

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Crooks (2002, this issue) has rightly pointed out that perceptions are unlike the external stimuli that trigger them, and that any discussion of “objective qualia” is likely to confuse or mislead. The important issue is whether the concept of objective qualia has been just unfortunate terminology and a bad example, or whether discarding the concept seriously harms the underlying position of mind–body identity. Neuroscience research to date has been fully consistent with some version of mind–brain monism, and is beginning to establish which brain areas and types of brain activity are critical for conscious awareness. Nevertheless, it is uncertain how soon, if ever, research will answer the question of *why* consciousness and brain activity are linked.

As a biological psychologist and not a philosopher, I feel a little like I am walking into the middle of an ongoing discussion in a dialect I do not fully understand. I am flattered to be invited to participate.

Mark Crooks (2002, this issue) wrestles with a serious issue in this paper: What does it mean (if anything) to say that mind states are identical with brain states? Much of Crooks’s paper argues a point that is clearly correct and that all should concede. The question is how much hinges on that point after we concede it.

The point that should be conceded is that the concept of “objective qualia” — that is, external stimuli corresponding to subjective experiences — is misleading, confusing, or wrong. As I read Crooks’s rebuttal of this concept, I found it difficult to believe that anyone as smart as Paul Churchland would actually defend it, but sure enough, Churchland’s 1985 paper repeatedly speaks of “objective redness” and other objective phenomenal properties. Phenomenal properties are in a perceiver, not in an object. If a block of iron could describe its “quale” of experiencing contact with water, it would describe water as “rustish.” However, clearly rustishness is not a property of water, but of

the interaction between water and iron. Similarly, redness, warmth, and pitch are properties of how energies interact with our nervous systems.

Crooks especially elaborates on the example of equating pitch with frequency. On this example, Crooks is more correct than he apparently realizes. Not only is it true that a perception of sound waves is inherently different from the sound waves themselves. Pitch and sound frequency do not even have an invariant one-to-one relationship. In the case of vision, most people know about optical illusions, colorblindness, brightness contrast, and other factors that can alter perception of a given stimulus (e.g., Purves, Lotto, Williams, Nundy, and Yang, 2001). Most people are less familiar with amusia ("tone-deafness") and auditory illusions (Ayotte, Peretz, and Hyde, 2002; Deutsch, 1995; Warren, 1999). In hearing as in vision, a given stimulus can produce different experiences in different people, or at different times and circumstances for a given individual. In short, it is wrong in many ways to say that pitch equals frequency.

What hinges on this point? Crooks (2002) concludes that it is difficult or impossible to demonstrate that mind is identical with brain activity, because as a general principle we cannot demonstrate that any thing is identical with any other thing: "The kinds of 'identifications' obtained in science are not of things to things, but of theories to theories" (p. 221). On this point I am puzzled, as it would appear that science routinely identifies thing with thing. For example, neuroscience research has demonstrated that the point of origin of a motor neuron's action potential (defined physiologically) is the same thing as the axon hillock (defined anatomically). If this is not an example of identifying one thing with another, perhaps Crooks has a more limited meaning of "thing" or "identify."

The term "identification" can be used in many senses, but the key sense for mind-brain monism is, I take it, that mind and brain are two ways of describing the same thing. Analogously, saying "the point of origin of the action potential" is another way of saying "axon hillock," even though the terms sound very different. Similarly, one might describe the *Mona Lisa* in terms of the facial expression, clothing, and so forth, or by a JPEG-format list of the reflectances of all points on the painting. Those two descriptions would appear radically different, but they would describe the same thing.

Or would they? Crooks could object that a description of the *Mona Lisa*'s smile or even the color of her garments is impossible unless the refracted light has passed through a human brain (or a computer that mimics a brain). Therefore, although a verbal description of the painting refers to the same object as the JPEG description, we gloss over an important distinction if we claim the two descriptions are equal. How important is the difference between the two descriptions, I am uncertain, except that no doubt the importance depends on the context of the discussion.

From a researcher's standpoint, some version of mind-brain identity is virtually necessary as a working hypothesis — that is, a hypothesis assumed to be true until it is shown to fail. Results so far are impressively consistent with this hypothesis. The big question, however, or the “hard question” as Chalmers (1995) put it, is *why* brain activity is associated with mind activity. Aristotle in *De Anima* wrote, “Men associate the soul with and place it in the body, without specifying why this is so, and how the body is conditioned; and yet this would seem to be essential” (Aristotle, trans. 1936, pp. 41, 43). The *why* question appears just as daunting today. Why are certain kinds of activity in certain parts of the brain associated with mind? (I don't say “why does brain activity produce mind” because if they are identical, neither one produces the other.) Stated in other words, in a universe composed of matter and energy, why is there such a thing as conscious awareness? It is possible to believe that mind is the same thing as brain activity without understanding at all *why* it is the same thing. Indeed, it is possible to accept mind-brain monism without any confidence that we shall ever understand why.

Let me digress to describe what I consider the best current research on brain correlates of consciousness. I think it illustrates what kinds of questions we currently can and cannot answer. Researchers flashed words on a screen for 29 ms per trial. When they preceded and followed a word with a blank screen, observers identified the flashed word with 90% accuracy, indicating consciousness of it. However, when the researchers preceded and followed a flashed word with masking patterns, observers almost never identified the word, and stated that they consciously saw nothing but the masking patterns. In both procedures, the word was flashed for the same time, and it did in fact stimulate parts of the nervous system, so here we can compare what happens to a stimulus when it is or is not consciously perceived. According to functional magnetic resonance imaging (fMRI) scans, the conscious stimulus activated the same cortical areas as the unconscious stimuli, but more strongly. The conscious stimuli also activated some parts of the prefrontal and parietal cortices which the unconscious stimuli did not (Dehaene et al., 2001).

These results underscore the point that some kinds of brain activity are conscious and others are not, or at least that some kinds are more conscious than others. (Consciousness probably exists in degrees, like almost anything else.) Research of this type can show us which parts of the brain are necessary for conscious experience and what type or amount of activity must occur there before a person can report conscious experience. Even to this extent, however, the method has limitations. Our criterion for consciousness is whether or not someone verbally reports awareness. We have no suitable criterion for consciousness in preverbal children, brain-damaged adults, or non-humans. Even with cooperative, highly verbal adults, we have to trust their self-reports, which may be wrong.

Does answering questions about the types and locations of brain activity during consciousness get us closer to answering the “hard” problem of why consciousness exists at all? Possibly. If the hard problem is solvable, then isolating the type of brain activity associated with consciousness is a big first step. I would hate to take Chalmers’ unenviable position of implying, in effect, that no one will ever solve the hard problem other than by accepting consciousness as an irreducible fundamental property of matter. Rensch (1977) said largely the same thing. If this prediction is wrong, it can be shown wrong, perhaps with embarrassing rapidity. If it is right, we may need an eternity to confirm it! Many questions being addressed today seemed hopelessly unanswerable mere decades ago.¹

On the other hand, I note that even Paul Churchland (1985) and Patricia Churchland (1986, 1996), who seem optimistic about explaining consciousness in physical terms, imply that neuroscience will explain mind only after researchers have replaced folk psychology with a new conception that presumably does away with the whole concept of mind and therefore any need to explain it (just as chemists did away with any need to explain phlogiston): “[I]t is possible that the folk theory that gives ‘awareness’ its meaning might turn out to be displaced by a superior theory. Accordingly, just as it turned out that there was no such thing as impetus, there may be no such thing as awareness” (P.S. Churchland, 1986, p. 309). It does seem a little odd to suppose that consciousness is a figment of our imagination. Furthermore, looking forward to discarding the whole concept of awareness seems an odd way to defend mind–brain monism.

At the risk of appearing to be what Patricia Churchland (1986, p. 315) calls a “boggled skeptic,” I wish to point out the difficulty of understanding emergent properties, such as the qualia that are presumably emergent properties of brain activity. As with “identification,” the term “emergent properties” has multiple meanings. I assume mind to be an emergent property in what Paul Churchland (1985) calls the “innocent sense”: mind is not a property of any one neuron, but only of a complex organization of active neurons. Still, accepting that assumption does not explain how the property emerges. Consider what appears to be a simple example of emergent properties, in the same sense: the properties of water, which emerge from the combination of hydrogen and oxygen. No one supposes that anything spooky happens when hydrogen and oxygen combine, but the properties of water would be unpredictable from what we know about hydrogen and oxygen. The ability of water to freeze at 0° C. and to expand after freezing depends on the length of the oxygen–hydrogen bonds and the angle of the hydrogen–oxygen–hydrogen

¹I have suggested to my publisher that the next edition of my *Biological Psychology* textbook should include an expiration date on the cover.

bonds. In other words, the properties of water reduce to those of hydrogen and oxygen. However, no one who studied hydrogen and oxygen by themselves would have been likely to predict the H–O–H bonds and angles with enough precision to predict the properties of water. In fact, even if we take the best available measurements of the bonds and angles, it is still tricky to get a computer to predict the properties of water, even though we already know those properties and can do our best to rig the computer program to predict what we know it should predict. This example, I hope, illustrates my earlier statement that one can believe in mind–brain monism without having any confidence that research will soon explain why the two are equivalent.

I take Crooks's message to be, in part, that we should not underestimate the difficulty of explaining what it means to equate mind with brain. The nature of qualia is uncertain, but we shall not find the answer in the external stimuli themselves. That point is, I believe, well taken.

References

- Aristotle. (1936). *On the soul* [W. S. Hett, Trans.]. Cambridge, Massachusetts: Harvard University Press.
- Ayotte, J., Peretz, I., and Hyde, K. (2002). Congenital amusia: A group study of adults afflicted with a music-specific disorder. *Brain*, 125, 238–251.
- Chalmers, D.J. (1995). Facing up to the problem of consciousness. *Journal of Consciousness Studies*, 2, 200–219.
- Churchland, P.M. (1985). Reduction, qualia, and the direct introspection of brain states. *Journal of Philosophy*, 82, 8–28.
- Churchland, P.S. (1986). *Neurophilosophy*. Cambridge, Massachusetts: MIT Press.
- Churchland, P.S. (1996). The hornswoggle problem. *Journal of Consciousness*, 3, 402–408.
- Crooks, M. (2002). Intertheoretic identification and mind–brain reductionism. *Journal of Mind and Behavior*, 23, 193–222.
- Dehaene, S., Naccache, L., Cohen, L., LeBihan, D., Mangin, J.-F., Poline, J.-B., and Rivière, D. (2001). Cerebral mechanisms of word masking and unconscious repetition priming. *Nature Neuroscience*, 4, 752–758.
- Deutsch, D. (1995). *Musical illusions and paradoxes*. LaJolla, California: Philomel Records.
- Purves, D., Lotto, R.B., Williams, S.M., Nundy, S., and Yang, Z. (2001). Why we see things the way we do: Evidence for a wholly empirical strategy of vision. *Philosophical Transactions of the Royal Society of London*, B, 356, 285–297.
- Rensch, B. (1977). Panpsychic identism and its meaning for a universal evolutionary picture. *Scientia*, 112, 337–349.
- Warren, R. M. (1999). *Auditory perception*. Cambridge, England: Cambridge University Press.