Advocating for the Replacement of Folk Psychology

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If I told you, "You make me smile," how would you react? Maybe you are cute, and I like you, so that is why I am smiling, but maybe it's because you are funny looking and I am a bit rude. How can you know, from that, whether smiling means very little to me or if it means everything? Simply put, you cannot. It is ambiguous, and while I could try to clarify how I feel about you, there is something to be said about the inadequacy of the words and terms we use to describe mental functions. The terms that we use to describe mental functions do not adequately capture the entirety of experience, and replacement is needed. As Paul Churchland argues, these terms do not fully describe mental phenomena such as sleep or retina perception, which we are able to research with neuroscience. These terms, such as 'belief' or 'fear', could also have different meanings for each individual, showing that the terms describe an individual's experience of a neurological event, and not the neurological event itself. Throughout this essay, I will use "sensation" to refer to a neurological event. Churchland coined the term "eliminative materialism" to assign the view that our current terms for mental phenomena are so incorrect they refer to nothing (Churchland 67). The point which I am arguing is weaker but could be used to support this view. Although authors like Hannan have expressed skepticism regarding replacing these terms, I do not think their arguments are successful. There are identifiable issues with our current terms for mental states and, therefore, there is room for improved terms to replace our current ones. I do not believe there are currently one-word terms that successfully encapsulate a sensation, like the word "pain" is meant

to. At this time I do believe we have more accurate theories from neuroscience, and due to the nature of neuroscience, simplified terms to replace our current ones will also come from studying neuroscience. Specifically, my purpose in this essay is to argue that we should transition away from being reliant on our current terms for mental functions in science and our daily lives.

Firstly, the problem with our current terms for mental states is that they inadequately explain some mental phenomena. Churchland makes this point when he discusses the mental phenomena which our current terms leave a mystery. Sleep, hand-eye coordination, understanding the difference between two- and three-dimensional visual images, memory, and the learning process are all examples Churchland uses to show what our current terms, or "folk psychology," are incapable of explaining or do not address (Churchland 73). For a theory of what mental states are, Churchland argues that this gap of explanation should be concerning, as such a gap would be for any other theory.

Another problem with our mental terms is that they vary in meaning. Specifically, the same terms may have different meanings when used by different people in different contexts. For example, imagine that I approach you and say "I'm in pain" when I have a splinter in my hand. You, in this situation, are a lumberjack and do not consider splinters painful by any means. My use of the term pain does not describe a situation that would bring you pain. Every term for a mental state has this subjective type of meaning which varies depending on the individual. This is an issue because every term could, in principle, be inaccurate. A sensation that is a belief for Joe could be common sense for Sasha or a misconception for Michael, and so on. These terms are flawed because there may be no uniform meaning. When we use one of these terms, we have no way of ensuring the term is consistent across individuals.

The issue is one of verifiability; I have no way of verifying what a sensation is because the current terms I use could have different meanings for others. Ludwig Wittgenstein expresses this point with his beetle-in-the-box thought experiment. In the experiment, we imagine that everyone has a box, the contents of which are private to them, but everyone can talk about the beetle inside the box. Wittgenstein argues that the concept of a beetle-in-the box does not matter because no one can see if their beetle is the same as or different than another, or if someone's box is empty (Wittgenstein 106e-107e). There is no way to verify what is inside the box. The descriptions of an unseen beetle are the same as of a personal sensation. What may be a big beetle for me could be a small beetle for you, or I could even be confused in thinking the beetle is a spider. Our terms for mental states have the same issue because they are based on private phenomena and not observable characteristics like the brain activity behind a mental state.

Of course, mental states are more complex than the exterior of a beetle. Moreover, at a pure rate of information exchange, mental states are far more complex than verbal language. Based on an estimate of 200 million neurons in the corpus callosum, Churchland estimates that this pathway between the brain's hemispheres is capable of exchanging information upwards of 24 megabytes per second (Churchland 88). He compares this to an estimate of 62.5 bytes per second for information exchange via verbal English language (88). This difference in exchange rate shows the inadequacy of current mental state terms in entirely describing sensations. Using these figures, it makes sense that our current terms for mental states are more like judgements than descriptions; much more would need to be said to describe the complexity of everything that is happening.

It is difficult to imagine replacing our current mental state terms due to how reliant we are on them. Barbara Hannan makes an argument against eliminative materialism and questions the need to seek replacement when the prospects seem dim. She argues that, if we agree that there are genuine cognisors and rational acts, then folk psychology cannot be false (Hannan 174). Furthermore, she notes that it seems self-undermining to suppose that the internal states posited by folk psychology do not exist, while advocating for cognitive science, which is based on such states (172-173). According to this argument, it does indeed seem unlikely that replacement terms are possible or coming soon. However, if we accept this argument, is it fair to say we should not advocate for replacement? I do not think so, for if we did, we would not have innovation.

There are numerous cases where the status quo was accepted until innovation occurred, and, in principle, the case of folk psychology should be no different. Consider the situation of Dyson vacuums. Until 1995, bag vacuums were widely used and seen as the top-of-the-line. However, after 15 years and 5000 prototypes, James Dyson introduced a new type of vacuum to the market which did not get clogged or leave dust around the house as you cleaned (Mochari par. 3). Dyson innovated when all major vacuum manufacturers saw no potential for replacement, and then proceeded to build a billion-dollar business. In this case, along with many other cases of innovation, there were identifiable issues with the status quo and replacement was successful. The situation with folk psychology is no different. The terms used in folk psychology are erroneous as conceptual understandings of mental states. Thus, there is room for improvement and innovation.

To revisit Hannan's critique of favouring neuroscience as a source of a replacement for folk psychology, she ignores how theories improve. While it is a concern that eliminative materialists favour

neuroscience because neuroscience studies the mental states they want to falsify, this is simply how science is advanced. In order to provide a replacement for anything, we must use what is to be replaced as a foundation. To return to the Dyson vacuum example, Dyson needed to base his research off of a traditional bag vacuum before he could make his own model. Improving on faulty concepts is simply the nature of how theories change. Hannan argues that this is a problem for the eliminative materialist, but I would argue this situation shows exactly why neuroscience will birth better terms for and a better understanding of mental states. If we expect replacements to not be based on inadequate descriptions of sensations, then how could we expect the replacements to be related to the sensations? It does not make sense that we would expect the replacements for mental state terms to not originate from studying those terms; they would not be about those terms otherwise.

Cognitive neuroscience, if not an exact replacement for our current mental state terms, is the most likely discipline for replacement terms to originate from. Neuroscience's purpose is to understand mental activity better, which is not accomplished by our current terms. In other words, neuroscience is meant to offer a better understanding of how our mental processes work. If we cannot accept that current neuroscience can replace our mental state terms, it is at least likely for acceptable terms to originate from neuroscience in the future. People still use bag vacuums, but the industry is shifting toward a better model. Likewise, we should shift away from folk psychology. Folk psychology terms fail to explain many mental phenomena, marking it a bad theory to explain sensations. Furthermore, the possible variance of meaning in these terms means there is potential for inaccuracy. These terms are an inconsistent way of describing sensations, allowing for miscommunication to exist where it is not necessary. Although Hannan opposes the need for replacement and neuroscience as the

discipline for it, this stance ignores the potential for innovation. To study neuroscience is to study mental states, which naturally leads to a reconsideration of how we currently define mental states. To improve, we must first consider what we will replace or elaborate upon.

There are not going to be single-word replacement terms to swap for ones like fear, belief, or pain because the issue here is not the words themselves, but the over-simplification of complex mental processes into categories. That said, I do believe there is the opportunity for practical, simplified concepts to arise from cognitive neuroscience. Given the reasons above, I think that we should eliminate these terms from common use. However, I am not so overzealous as to say that we need to stop using these terms today, but instead, we should teach neuroscience at younger ages to gradually shift our language toward more accurate terminology. There are already some stepping-stones showing progress today, such as the word "hangry," meaning that your hunger is influencing your mood. Our mental states are influenced by other physiological factors, which neuroscience teaches us. The purpose of the argument is to call for replacing ineffective terms in favour of those provided by cognitive neuroscience, meaning that we should improve our language to better reflect our understanding, thus allowing us to eliminate our current mental state terms in the future.

Now, there is an objection regarding the feasibility of what I am arguing for. The concern is that, if the problem is an over-simplification of mental processes, it may not be practical or efficient to describe mental processes more accurately. For example, if we wanted to explain everything with physics to be absolutely accurate about how the world works, we could in principle, but it would be inefficient and take a burdensome amount of time. Likewise, if we are estimating that the average

human brain has 86 billion neurons with anywhere between 10 000 and 100 000 synapses per neuron (Herculano-Houzel 22, 79), we would have the same problem as describing everything using physics. How much time would pass before we described pain or depression? To be more accurate in our descriptions, it appears we would have to adopt a far more complicated way of describing mental states.

My response to this objection is that, in common practice, we would use shorthand to be more accurate without being overly precise. Through this paper, I have argued that our current mental terms are inaccurate and I am making a distinction between accuracy and precision, where precision refers to a complete description of all details. Our mental terms are inaccurate to the point that they impede our understanding of mental phenomena; however, for practicality, it is not always necessary that we know how all of our neurons are interacting, just like we do not always need to know how all atoms are interacting. Instead, we can have terms that are more accurate without being unnecessarily precise. I believe our language about mental phenomena should better reflect how our sensory systems interact with hormone release and so on to improve our understanding of each other's mental states. In your average setting, what I am advocating for is more like expressing chemistry and biology than describing physics. There is a degree of abstraction from the strictly precise processes, but not such a severe degree of abstraction that our understanding of the processes becomes inaccurate, as seen with our current mental terms. Is this more work than single-word terminology? Absolutely. However, it is not nearly as infeasible as describing every single interaction which happens in our neurological and physiological systems.

In summary, I am arguing for the replacement of our current mental terminology in science and our daily lives. I side

with Churchland in arguing that our terms fail to explain many mental phenomena, which stamps these terms as a bad theory for understanding mental processes. Furthermore, I argue that these terms could have inconsistent meanings depending on the user, resulting in an inaccurate description of mental processes. This issue is captured by Wittgenstein's beetle-in-the-box thought experiment, which shows how our current mental language does not verifiably describe the experience. Hannan raises multiple objections to the eliminative materialist view – such as the issue of cognitive science being based on mental states – and argues that we should not seek replacement when it seems unlikely there will be one. I believe this ignores how innovation works. As well, against Hannan, I argue that replacement terms must relate to our current terminology to improve it. Like Churchland, I see terms from cognitive neuroscience as the best-fitting replacement for our current terms, or at least I see cognitive neuroscience as the most likely discipline to birth replacement terms. Neuroscience's purpose as a discipline is to understand mental processes better, and therefore I believe neuroscience can, at least in principle, provide a more accurate account of our mental states than our current terms. There is the objection that what I am advocating for is infeasible, but I am seeking more accurate terms, not necessarily more precise ones. In other words, I am fine with abstraction from the actual processes, but not too much abstraction, as seen with our current mental terms. My intent with this paper is to provide the grounds for choosing better terminology than what we currently use to more accurately explain mental experiences to one another.

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