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The (Very Real) "Illusion of Free Will"

This paper pulls from the relevant neuroscience of consciousness literature to provide support for the assertion that while humans have a very strong visceral sense of genuine agency, we are not as "free" as we intuitively feel, and that this feeling is, in fact, illusory. In his *Treatise on Human Nature*, David Hume defines "conscious will" as "*nothing but the internal impression we feel and are conscious of, when we knowingly give rise to any new motion of our body, or new perception of our mind*" (Hume 1793, p. 399). This definition puts consciousness at the very center of the debate – "will" is the conscious feeling of such causing, forcing, or monitoring. This definition makes sense, seeing as "conscious experience" is a necessary precondition for a person to be able to claim that an action was consciously willed (Wegner, 2002). Taking inspiration from Hume, therefore, this paper will argue that free will cannot exist, largely because our intuitive feeling of "conscious willing" is an "illusion" created by the subconscious. The argument is presented as follows:

(a) Free will is defined as the "freedom to do otherwise" (O'Connor, 2022).
(b) This capacity for "doing otherwise" (e.g. "decision-making") relies on our ability for conscious experience (e.g. Dehaene's "conscious access").
(c) Research strongly suggests that this conscious experience is an "illusion," fed to us by our subconscious.
(d) Therefore, if we can show that our conscious experience is an "illusion," it follows that free will is an "illusion".

Cognitive neuroscientist Stanislas Dehaene's extensive subliminal masking and priming studies provide a good starting point for the argument. His studies show that a whole host of information, including but not limited to semantic meaning and numerical value, can be processed and stored unconsciously, without ever making it into conscious awareness. Dehaene uses these findings to suggest that our subconscious acts as a "Bayesian statistician," constantly constructing probability distributions about perceptual problems. The highest-likelihood interpretation is what eventually gets fed into consciousness. It should be noted that this interpretation seems to render consciousness fairly useless, at least with respect to perceptual problems. However, since Dehaene works under the assumption that "conscious access" accounts for "all attended information that enters awareness and can be reportable to others," we can extend this line of thinking to *all* conscious experience. When we do, we are left with the conclusion that every decision we make is determined by subconscious systems, with consciousness only "around to know about [them]" (Klemm, 2010).

Thus, our "will" is illusory because the decision is not wholly "ours," at least in the strongly personal sense that we feel it is. One could argue, however, that we cannot extend Dehaene's research to every aspect of conscious experience, and that we do have some kind of non-illusory "conscious will" that is more responsible for decision-making than the subconscious systems that facilitate tasks of perceptual nature (e.g. interpreting ambiguous visual stimuli). However, even if this *was* the case, Dehaene's experiments at least prove to us just how much information is stored subconsciously, which ultimately means that the decisions you "willfully make" are predicated on subconscious factors that you are completely unaware of and are also completely out of your control.

Still, a critic might insist that since Dehaene's studies are mainly about perception and not so much about free will-related behaviors like decision-making, we do not have enough evidence to show that "doing otherwise" is caused by subconscious neural activity that precedes the feeling of conscious will. However, subconscious activity has also been shown to predicate these free-will kinds of activities, like the conscious will to move, inhibition, and others:

The accumulation of experimental evidence for the subconscious origins of conscious will began with a simple experiment performed and elaborated by neuroscientist Benjamin Libet. While monitoring subjects' voluntary finger movements, Libet observed a major change in the EEG signal from motor cortex about 350 ms before subjects claimed that they had made the decision to move (e.g. the "readiness potential" / RP) (Libet, 1983). His interpretation of the results, similarly to Dehaene's interpretation of his own results, was that the decision to move was made unconsciously and, importantly, that consciousness was not part of the cause. In other words, our consciousness merely functions to retroactively confirm that there was a willed action, which must have been developed subconsciously.

Other experiments have shown similar results for different kinds of actions. For example, Desmurget (2009) showed that both conscious intention and motor awareness arise from an increase in parietal activity before movement execution. Relatedly, in examining the relation between the duration of the RP "veto window," the components of the RP waveform, and impulsivity, Caspar & Cleeremans (2015) found that impulsive people exhibit a shorter delay between their intention and action than non-impulsive people, and that a specific component of Libet's RP (specifically the growth rate) explains this difference. While Dehaene has provided evidence to suggest that our "perceptual world" is an illusion created by the subconscious, these studies suggest that the rest of our conscious experience might, in fact, work in the same way. Indeed, if decisions are made unconsciously, and the conscious mind is not part of the cause, our "will" must be an illusion.

However, there have been significant issues raised with each of the previously mentioned articles, especially those that employ "Libet-style" paradigms. In addition to the problem of the reliability of both introspection and accuracy of timing awareness in typical Libet experiments, neuroscientist W. R. Klemm takes specific issue with the notion that complex cognitive processes can be accurately explained by such simplistic experiments. He argues that because there are many other systems that are necessarily involved in decision-making (e.g. memory and reward systems, emotional and movement control networks, etc.), the single brain area monitored by Libet should not have been the only factor used to determine the temporal relationship between the conscious decision to act and subsequent engagement of motor control processes. Even free will critic and philosopher Daniel Dennett has argued that since conscious decisions are "smeared about" in time and space, they should correspond to distributed processing throughout many parts of the brain (i.e. not just the motor cortex neurons that control finger movement) (Dennett, 2003).

However, is it not highly possible that these other systems involved in decision-making do make a considerable impact on decision-making via *subconscious* processing? The mere involvement of additional systems does not tell us anything about the illusion of conscious will – only that Libet-style experiments fail to capture the

entire picture. To shed real light on the question, we must seek to understand more about both the *degree* and *nature* (e.g. “conscious” or “unconscious”) of the involvement of these different systems in decision-making. For example, one study showed that consciousness is, in fact, a *requirement* for unconscious systems to effectively execute their “Bayesian inference” (Pack et al., 2001). Specifically, they found that the loss of consciousness under anesthesia was followed by a sudden dysfunction of the neuronal circuits that integrate our senses into a single percept. Therefore, at least “some” amount of consciousness is needed for neurons to exchange both bottom-up and top-down signals and “converge” on a coherent interpretation of the outside world. (For the purposes of this argument, however, we should remember that perception is still *largely* predicated on subconscious factors that are completely out of our control). Further research should similarly seek to elucidate the *degree* of the role that conscious processing plays in this convergence process, as well the degree and *nature* of the involvement of other factors relevant to decision-making (e.g. memory, emotion, etc).

Suppose, for a moment, we agree with Klemm that it is much too large of a conceptual leap to generalize the neural underpinnings of willful finger movements to much more complex decision-making processes that involve introspection, planning, and consideration of the past and future. If we do accept that subconscious systems create the illusion of consciousness (or at least play a very large role), we are forced to conclude that almost *everything* is an illusion created by the subconscious, i.e. not just our capacity for “doing otherwise,” but also our sense of “self,” and even the underlying motivations for the things we “wish to do”. It follows, then, that the contents of Klemm’s aforementioned introspections and plans, as well as memories of the past and goals for the future, are part of the illusion as well. This response to Klemm (2010) seems to have exposed our initial argument as an argument for materialism. Effectively, we *are* arguing that every mental state (e.g. “conscious willing”) is the result of a physical brain state (e.g. “subconscious neural activity”). This is a reasonable argument to make, though – when arguing for the illusory nature of free will, we have no other way of defining “illusory” than simply “material,” because it is our *intuition* that our mind is “immaterial” (Forstman & Burgmer (2015) have shown that humans are “intuitive mind-body dualists”). Indeed, a reason that “free will” is even a topic of debate is because anti-free will arguments challenge our strong intuition that we have an autonomous, decision-making “self”.

Asserting that free will is an illusion is not to say that free will cannot exist in the operational sense. Undoubtedly, both belief in free will and maintenance of a strong sense of personal agency serve crucial roles in society with regard to moral responsibility (and are even hypothesized to have served an evolutionary function in facilitating in-group cooperation – see Clark et al. (2014) for a discussion of the “Theory of Motivated Free Will Belief”). The goal of the preceding argument is to maintain a strong opposition to the dualistic notion that we have a separate “mind” or “self” that can override the physical brain’s functioning. Even if we were able to definitively show that decisions that intuitively feel very intentional are caused *entirely* by subconscious behavior, it shouldn’t make our intuitive feelings of intentionality any less valid. All it should do is underscore that there is no higher-level “self,” other than the neural activity that creates the illusion of the “self,” that governs our decisions, motivations, and desires.

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