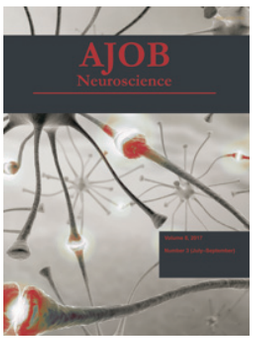

AJOB Neuroscience

ISSN: 2150-7740 (Print) 2150-7759 (Online) Journal homepage: https://www.tandfonline.com/loi/uabn20

Unconscious Volition

Nada Gligorov

To cite this article: Nada Gligorov (2017) Unconscious Volition, AJOB Neuroscience, 8:3, 151-152, DOI: 10.1080/21507740.2017.1366583

To link to this article: https://doi.org/10.1080/21507740.2017.1366583

Robeyns, I. 2016. Conceptualising well-being for autistic persons. *Journal of Medical Ethics* 42 (6):383–90.

Sen, A. 1993. Capability and well-being. In *The quality of life*, ed. M. Nussbaum and A. Sen. Oxford, UK: Clarendon Press.

Unconscious Volition

Nada Gligorov, Icahn School of Medicine at Mount Sinai

In *Philosophy and the Mirror of Nature* (1979), Richard Rorty describes a distant planet inhabited by a community called the Antipodeans. The Antipodeans are very similar to humans; they have internal states, such as beliefs, desires, and headaches; they describe themselves as persons and think they are distinct from other animals because they can reason; they have art, literature, and all other accoutrements of culture. They differ from humans in that they claim that they do not have minds. When one asks them, for example, what it is like for them to feel the breeze or to see a red flower, they answer that sensations are merely physical states of the brain caused by objective properties in the world. According to the Antipodeans, psychological states do not have subjective aspects. In describing the Antipodeans, Rorty's aim is not merely ethnographic; by characterizing them as very similar to humans, he wishes to show that our psychology and all its products can be accounted for without invocation of conscious mental states. His view is that humans in fact are Antipodeans.

One need not go as far as Rorty to notice that consciousness, often treated as an indicator of the presence of mental states, has played an outsized role in a variety of debates in bioethics. Fischer and Truog (2017) rightly point out that there are intractable difficulties in identifying consciousness and in distinguishing it from unconsciousness, and that when it comes to offering life-prolonging treatment we ought not to rely on our limited abilities to determine whether an individual is conscious. Despite their skepticism about the distinction between consciousness and unconsciousness, Fischer and Truog propose interactive capacity as one of the criteria by which we make decisions about who should receive life-prolonging treatment. Interactivity, according to them, rests on our ability for volitional behavior, which is the ability to process external stimuli and to react to them in a purposeful manner. Although they countenance that consciousness is not sufficient for volitional behavior, they maintain that it is necessary for it, that is, that volitional behavior is an indication of the presence of consciousness. I plan to show that there are reasons to doubt that volitional behavior always requires consciousness.

If we take interactivity to require both the ability to process external stimuli, including commands or instruction, and the ability to respond to those, for instance, through action, then there is evidence that both those elements of interactive ability can be accomplished without consciousness. I begin by showing that purposeful behavior in response to instructions does not always require consciousness. Libet, Wright, and Gleason (1982) showed that voluntary action is preceded by unconscious preparatory motor activity. In an experiment, Libet, Wright, and Gleason (1982) asked participants to flick their wrist whenever they felt the urge to do so. Using electroencephalography (EEG), they showed that the movement of the wrist was preceded by preparatory activity in the brain. They called this burst of electrical activity in the scalp readiness potential. In a further study, Libet and colleagues (1983) demonstrated that the conscious intention to perform an action, what they called the first awareness of the wish to act, was also preceded by unconscious activity in the brain. In order to capture the awareness of the wish to act, Libet and his colleagues constructed an oscilloscope clock. The participants were told to look at the center of the clock. For each voluntary wrist flexion, the subjects were asked to indicate where the moving spot on the clock was located when they first experienced the conscious intention to move their wrist. This procedure was intended to capture the time the subjects had experienced awareness of the wish to act (Libet et al. 1983). In this study, as in the previous one, there was a lag between the muscular activity in the wrist and readiness potential, but there was also a delay between the awareness of the wish to act and readiness potential. The unconscious preparatory brain activity preceded the conscious intention to perform the action.

Libet (1999) hypothesized that despite the role of the unconscious brain activation in volitional behavior, the conscious will to act would be required to determine the ultimate choice of action. This contention has been proven wrong. Contemporary brain imaging studies using functional magnetic resonance imaging (fMRI) have been used to demonstrate that that the content of the decision is also made unconsciously and heralds the conscious awareness of the decision to move. In a study by Soon and colleagues (2008), participants were asked to fixate on the center of the computer screen as a stream of letters was presented to them. They were asked to press one of two buttons using either their left or right index fingers at any point they wished to do so. To capture conscious intent, Soon and

Address correspondence to Nada Gligorov, Associate Professor, Bioethics Program, Icahn School of Medicine at Mount Sinai, One Gustave Levy Place, Box 1108, New York, NY 10029, USA. E-mail: Nada.Gligorov@mssm.edu

colleagues asked the subjects to remember the letter that was on the screen when they first felt the pangs of the conscious will. Based on brain imaging data alone, circumventing the need to ask research participants, Soon and colleagues (2008) were able determine which action would be performed, that is, whether the participant would move the left or the right index finger. The unconscious neural activity used to predict the decision to move a particular finger preceded the conscious awareness of the decision by about 10 seconds. Both lines of research by Libet and colleagues (1983) and Soon and colleagues (2008) serve to dissociate purposeful action from consciousness.

Circling back to the elements of interactive capacity, processing and reacting to stimuli also comprise a crucial aspect of that ability. There is evidence, however, that even this aspect of interactivity can be achieved without consciousness because unconsciously perceived signals can inhibit volitional behavior (Dehaene 2014). Participants asked to perform a repetitive task, for example, clicking a key whenever a picture appeared on a screen, were able to inhibit that response when an agreed-upon stop signal was presented, for example, a picture of a black disk. Surprisingly, the stop signal had an inhibitory effect on the performance of the repetitive task even when it was presented subliminally.[1] Participants stopped performing the repetitive task on cue even when it was only unconsciously perceived (Dehaene 2014, 85). The ability to inhibit automatic responses is a function of the brain's central executive system, which had been thought to require consciousness. Taken together, this evidence demonstrates that consciousness is neither necessary nor sufficient for volitional behavior. It should be noted that the studies described relied on healthy volunteers and that they cannot be used to draw unqualified conclusions about the actual presence of purposeful behavior in individuals with disorders of consciousness. My argument is only that the evidence for unconscious volitional action demonstrates that purposeful behavior in not a reliable indicator of consciousness.

Rorty's argument that we can accomplish psychological explanations without invoking the conscious experience of mental states could be used to expand the argument by Fischer and Truog, and to argue that consciousness is not just difficult to distinguish from unconsciousness, but that it is not as important a feature of human psychology as previously assumed. I suspect that one of the reasons consciousness is often prioritized over other psychological faculties is because it is considered to be the marker of whether somebody has psychological states at all. What one should conclude from the studies showing that consciousness is not necessary for purposeful behavior is that this is an erroneous assumption. Furthermore, when consciousness is no longer taken to be an indicator of the presence of psychological states, this should prompt a revision of the conception of psychological states to include some unconscious brain processes.[2] If the category of psychological states is expanded in this manner, consciousness becomes just one among a variety of human psychological abilities. When consciousness is characterized as only an aspect of human psychology, then the loss of that ability would not signal the loss of psychological states as such. This would allow for a more comprehensive approach to what aspects of an individual's psychological function, in addition to consciousness, are morally significant and which of those abilities are important to consider when making decisions about life-prolonging treatment. The evidence I presented supports the claim that purposeful behavior is not a reliable indicator for consciousness. My argument, however, is not intended to undermine the importance of interactive capacity, as described by Fischer and Truog, but to point out that purposeful behavior should be considered morally significant even if it occurs without consciousness. ■

REFERENCES

Dehaene, S. 2014. *Consciousness and the brain: Deciphering how the brain codes our thoughts*. New York, NY: Viking Penguin.

Fischer, D., and R. D. Truog. 2017. The problems with fixating on consciousness in disorders of consciousness. *AJOB Neuroscience* 8(3): 135–140.

Gligorov, N. 2016. A defense of brain death. *Neuroethics* 9(2): 119–27.

Libet, B., E. W. Wright, and C. A. Gleason. 1982. Readiness potentials preceding unrestricted spontaneous pre-planned voluntary acts. *Electroencephalography & Clinical Neurophysiology* 54:322–25.

Libet, B., C. A. Gleason, E. W. Wright, and D. K. Pearl. 1983. Time of conscious intention to act in relation to onset of cerebral activity (readiness potential): The unconscious initiation of a freely voluntary act. *Brain* 106:623–42.

Libet, B. 1999. Do we have free will? *Journal of Consciousness Studies* 6(8–9): 47–57.

Rorty, R. 1979. *Philosophy and the mirror of nature*. Princeton, NJ: Princeton University Press.

Soon, C. S., M. Brass, H.-J. Heinze, and J.-D. Haynes. 2008. Unconscious determinants of free decisions in the human brain. *Nature Neuroscience* 11(5): 543–45.

1. A stimulus is presented subliminally when it is shown long enough to incite perceptual processing but not long enough to be consciously perceived. For more on the subliminal prime paradigm, see Dehaene 2014, 47–88.

2. For more on how psychological states should be expanded to include unconscious mental processes, see Gligorov (2016).