

# Neurocognitive basis for free will set out for the first time

July 31 2019, by Sheila Kiggins



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Do human beings genuinely have free will? Philosophers and theologians

have wrestled with this question for centuries and have set out the 'design features' of free will—but how do our brains actually fulfil them?

A University of Warwick academic has answered this question for the first time in a new paper published today [31] in *Proceedings of the Royal Society B*.

Professor Thomas Hills from the Department of Psychology set out to bridge the gap between the philosophical arguments for free will and the neurocognitive realities.

In philosophy, elements of free will include the ability to do otherwise—the 'principle of alternative possibilities'; the ability to deliberate; a sense of self; and the ability to maintain goals – 'wanting what you want.'

Drawing on examples from making a morning coffee to taking a [penalty kick](#), and considering organisms from human beings, e-coli, cockroaches, and even robots, Professor Hills argues that our neurocognitive abilities satisfy these requirements through:

1. Adaptive access to unpredictability
2. Tuning of this unpredictability to help us reach high-level goals
3. Goal-directed deliberation via search over internal cognitive representations
4. A role for conscious construction of the self in the generation and choice of alternatives.

Commenting on his paper, Professor Hills said: "Neurocognitive free will—the free will that we have as humans—is a process of generative self-construction. I demonstrate that effortful consciousness samples from our experience in an adaptively exploratory fashion, allowing us to

explore ourselves in the construction of alternative futures.

"There is evidence that people who believe in free will are more pro-social. They adopt behaviour that benefits others and society as a whole, and have a greater sense of control of their future—they believe they can influence the future in positive ways. This is important. Neurocognitive free will provides a basis for understanding why they are correct.

"Neurocognitive free will ties our understanding of free will to something real. It also helps us to understand what it means. I suspect it's not what most people think. As Sartre once said, "Freedom is not a triumph." But I think neurocognitive [free will](#) gives some hints to how it could be. That will be a focus of future work. "

**More information:** Thomas T. Hills. Neurocognitive free will, *Proceedings of the Royal Society B: Biological Sciences* (2019). [DOI: 10.1098/rspb.2019.0510](#)

Provided by University of Warwick

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