A neuroscience approach to investigating how hierarchy influences moral behaviour

ABSTRACT:

Background
The sense of agency (SoA), the feeling of being the author of one's actions and outcomes, plays a critical role in decision-making. While prior research has explored its neural correlates, most studies have focused on neutral tasks, neglecting moral decision-making. Additionally, most studies used convenience samples, overlooking the potential influence of environments like the military on SoA processing.

Aims
This project aimed to investigate the neural basis of SoA in military and civilian participants using fMRI, examining their decisions to freely act, follow, or resist orders to harm another person.

Method
In Study 1, participants either chose freely or followed orders to inflict a mild shock on a victim. SoA was assessed through temporal binding (TB)—the perceived temporal distortion between voluntary and less voluntary decisions. In Study 2, participants received orders to inflict a mild shock and had to choose whether to obey or disobey.

Results
Study 1 revealed reduced SoA when following orders compared to acting freely. Key brain regions associated with TB included the occipital lobe, frontal gyri, precuneus, and lateral occipital cortex. Importantly, no differences between military and civilians emerged at corrected thresholds, suggesting that daily environments minimally influence the neural basis of moral decision-making. Study 2 showed that military participants experienced reduced SoA when disobeying orders. Both military and civilian participants relied on similar neuro-cognitive processes when disobeying, but the relationship between prosocial disobedience and activity in the right TPJ, Prec/PCC, and bilateral AI was stronger in military participants.

Conclusions
These studies indicate that while both populations rely on similar brain regions for SoA in moral decisions, specific differences emerge when resisting orders.

Keywords
Sense of agency, Temporal binding, Military, fMRI, Decision-making, Moral behaviors

Published Work:

Caspar, E. A. (2024). *Just following orders: Atrocities and the brain science of obedience*. Cambridge University Press. doi:10.1017/9781009385428

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Researcher's Contacts:

Emilie Caspar
Ghent University
Henri Dunantlaan, 2
9000, Ghent,
Belgium

Phone: +32 9 264 86 44
Email: Emilie.Caspar@Ugent.be