The Reward of Others’ Pain: The Morality of Schadenfreude and Neural Correlates of Latent Preferences for Out-Group Harm

Kelsey Ichikawa | Class of 2020 | Neurobiology and Philosophy | Advisors: Mina Cikara and Susanna Siegel

Abstract

Divisions between social groups often produce violent conflict. Yet we know relatively little about the neural mechanisms underlying intergroup harm. There is also minimal interdisciplinary work addressing how our neuroscience knowledge should impact our moral evaluation of inherent yet “ugly” emotions like schadenfreude (pleasure in another’s misfortune). To explore these questions, this thesis brings experimental work in dialogue with normative claims. I investigated the brain regions involved in preferences for two kinds of rewards: a benign one that benefits the participant’s political in-group, and a spiteful one that does the same and also harms the political out-group. We used functional magnetic resonance imaging to assess neural activity while participants made choices to pursue these rewards. After modeling their behavior with a reinforcement learning algorithm, we found that ventral striatum activity significantly tracked reward prediction error. Past experiments indicate that schadenfreude also recruits regions from the subcortical reward circuitry. This convergence of evidence suggests that schadenfreude potentially elicits a positive reward signal that disposes a person to aggress against those whose misfortune she enjoyed—passive pleasure in another’s pain can subsequently facilitate first-person harm. In light of this, I argue that schadenfreude has morally bad consequences and can also be morally ill-fitted.

Behavioral Task

4-armed bandit task: On each trial, the participant chose one of four slot machines and received immediate feedback about reward outcome.

3 possible outcomes:
- Earn dollar (adds money to bonus pool for others who share participant’s political party)
- Burn dollar (adds money to bonus pool for others who share participant’s political party AND subtracts money from bonus pool of opposing political party)
- Null (no reward)

49 participants, 39 after exclusion
- Earn vs. Burn contrast: no significant voxels
- Latent preference parameter showed variance across the sample in preference for earns
- Using parameters from the computational model of behavior to analyze fMRI BOLD time series: Parametric modulator analysis showed that ventral striatum BOLD activity significantly tracks trial-by-trial, participant-specific reward prediction error

Neuroimaging Results

Moral Philosophy of Schadenfreude

- Evidence from neuroscience suggests that schadenfreude potentially involves a positive reward signal, which may lead to an inclination to first-person harm (which our experiment shows also involves the reward system)
- This is a morally bad consequence even if schadenfreude is well-fitted for the situation.
- Justice-based defenses of schadenfreude fail, because oftentimes the misfortune is not true justice (disproportionate, karmic, not corrective).