



Thou Shalt vs. Thou Shalt Not: The Neural Processes Underlying Decisions to Help Versus Decisions to Avoid Doing Harm

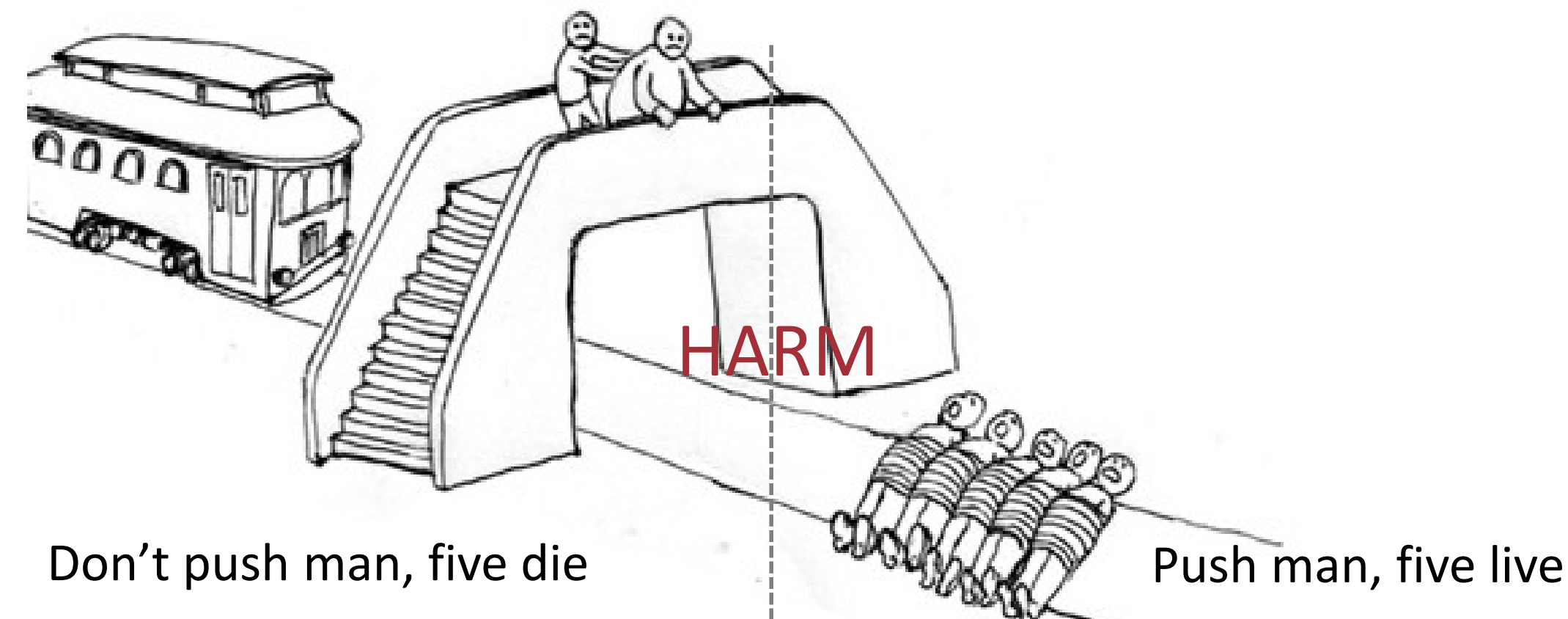


Sophie Wharton

Harvard University, Department of Psychology

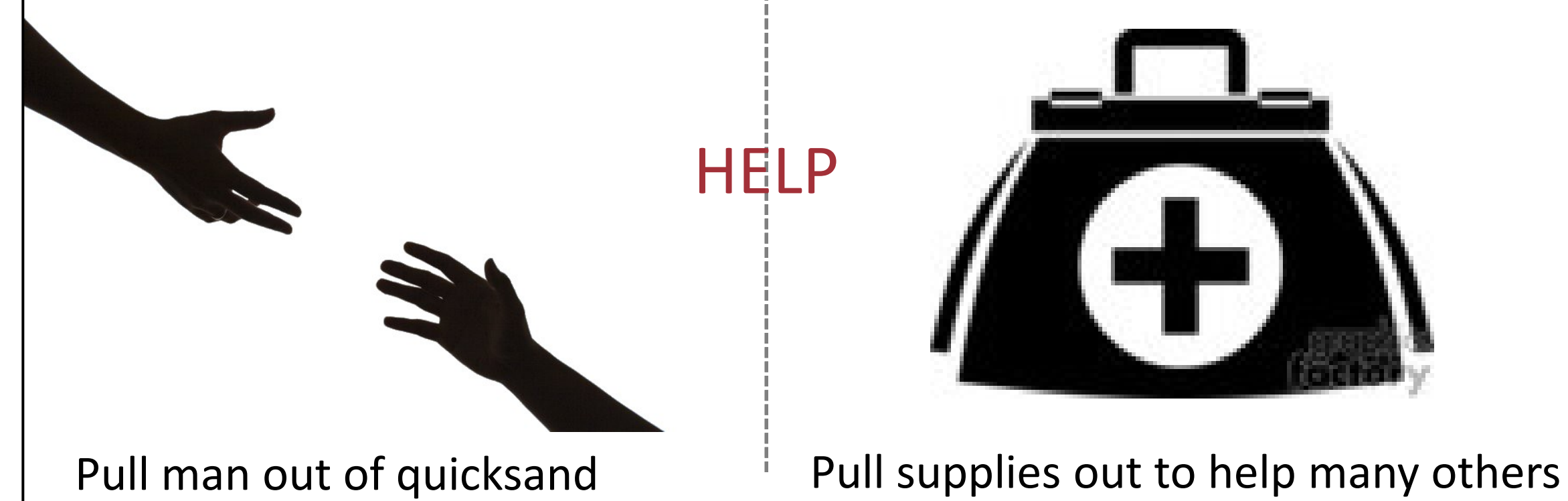
Question

Are the emotional processes that motivate us to provide help psychologically distinct from those motivating us to avoid doing harm?



Deontological

Utilitarian



Hypotheses

"Agent Hypothesis": emotional response driven by simulation of agent's harmful/helpful action

- Conditioned associations between harmful or helpful **actions** and the negative or positive reinforcement they result in
- Lateralization** literature finds approach processes activate left hemisphere of brain and avoid processes activate right hemisphere
- Neural Prediction:** left brain more active for Help, right brain more active for Harm

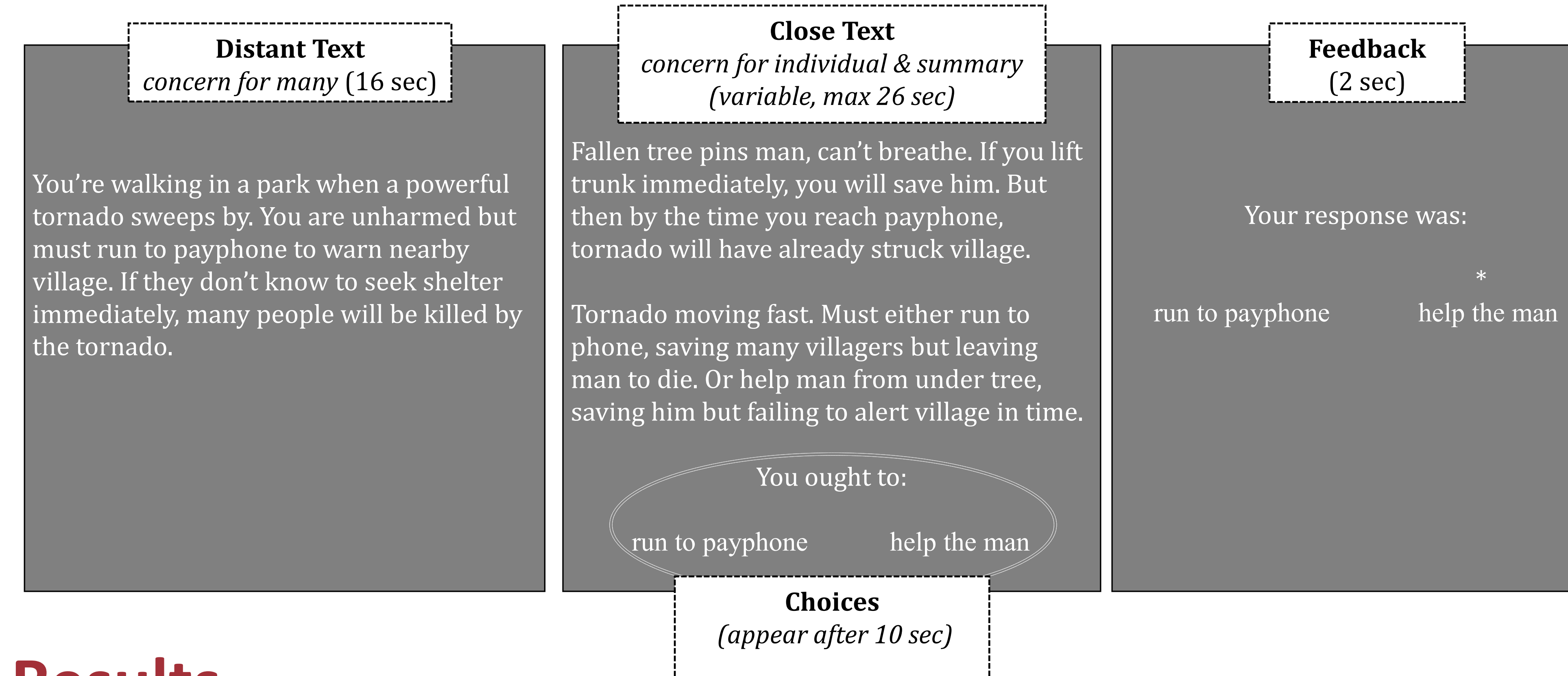
"Victim Hypothesis": emotional response driven by **empathetic** simulation of victim's pain

- Neural Prediction:** similar patterns for Help and Harm; insula for emotional compared to utilitarian judgments (insula = empathy, pain)

"Common Utilitarian Prediction": similar cognitive control for both Help and Harm (**DLPFC & ACC**)

Methods

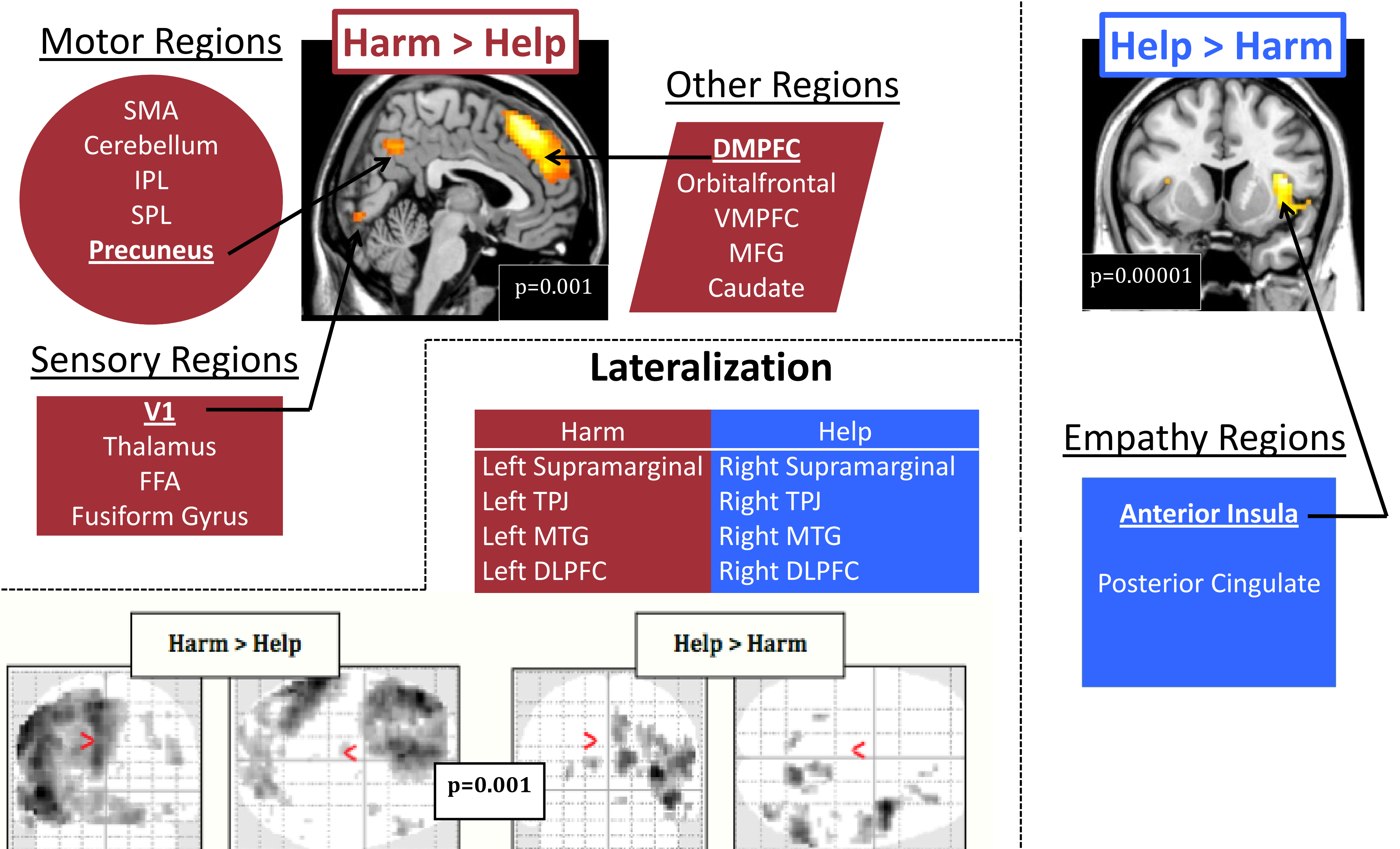
- 34 right-handed adult participants, 4 removed during analysis due to head motion
- 3T Siemens scanner, Harvard Center for Brain Science (TR= 2.5 sec, 3x3x3 mm voxel size)
- 40 high conflict moral dilemmas - 20 Help & 20 Harm - presented in 5 sets of 8



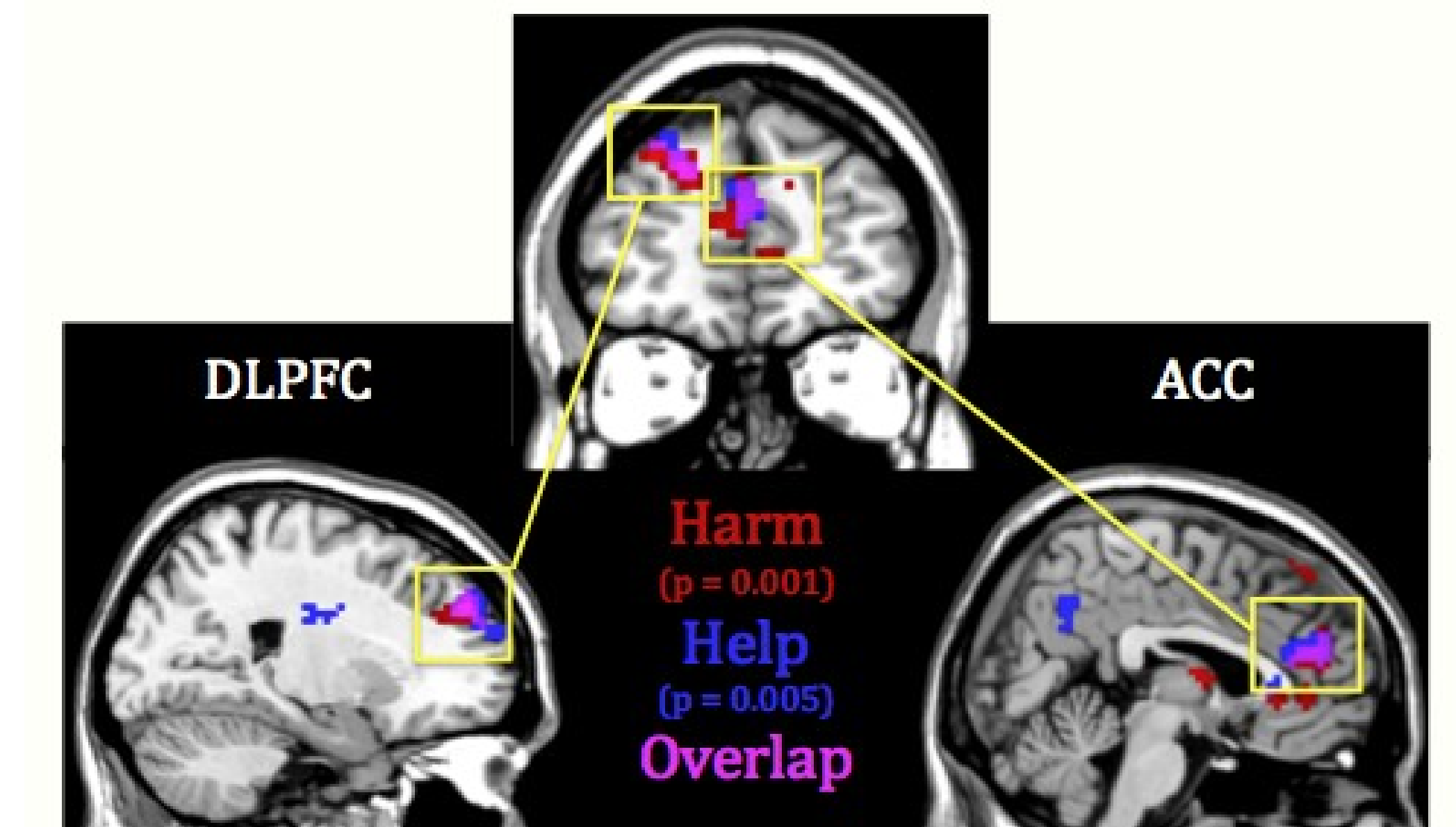
Results

- Mean deontological responses for Help = 0.42, mean for Harm = 0.50 (*ns* difference)
- Correlation between Deo/Util Score for Help and Harm: $r = 0.78$ ($p < 0.00001$)

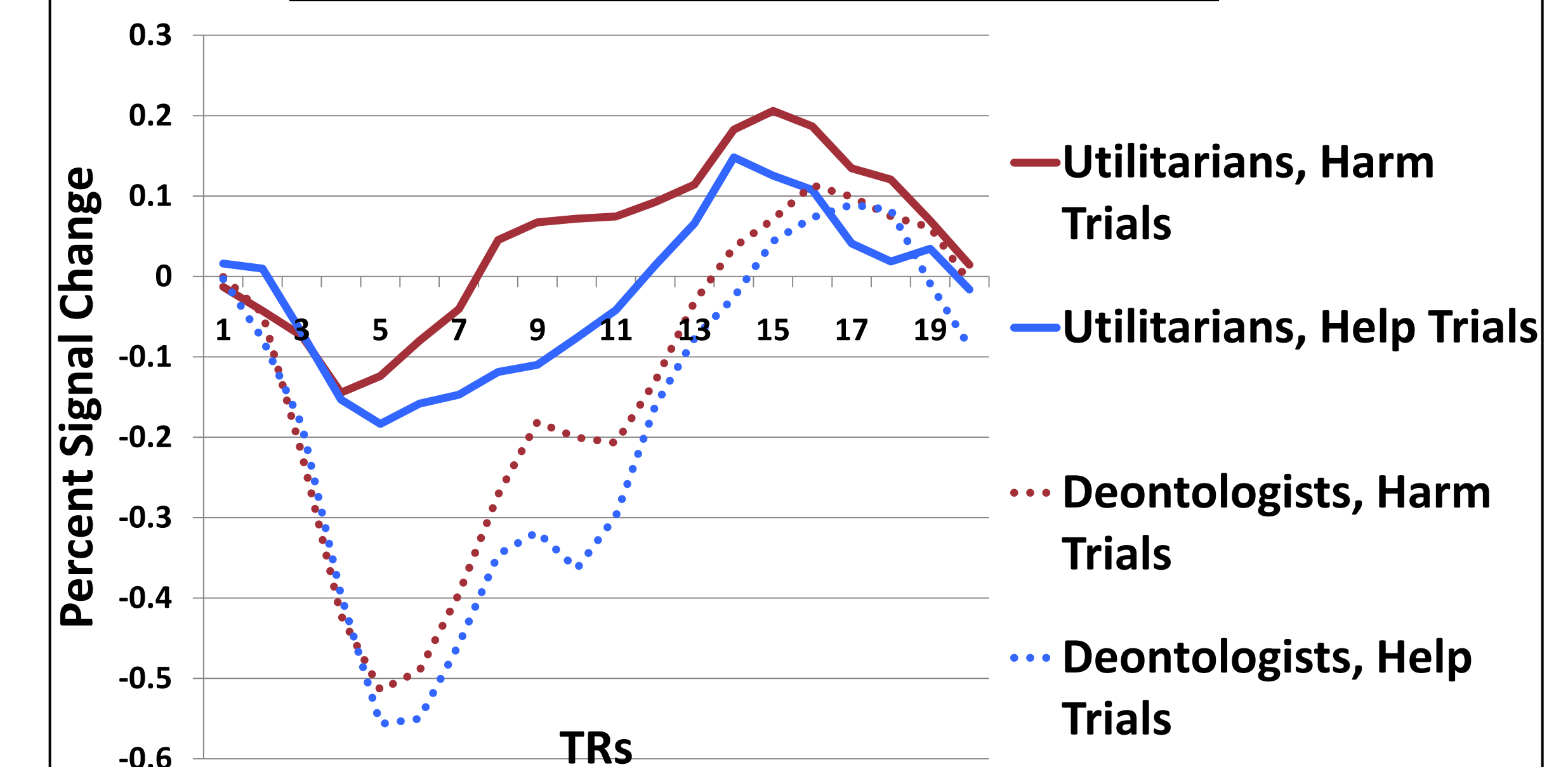
Group-level Analysis: collapsing across Deo/Util responses



Between-Subjects Analysis: Deo/Util score as Covariate



DLFPC Timecourse: Median Split



Conclusions

- Embodied Harm (motor and sensory activation) supports **Agent Hypothesis**
- Empathetic Help (insula activation) supports **Victim Hypothesis**
- Negativity Bias: Harm is Stronger Than Help
- Left=Harm **lateralization** unexpected, but makes sense given both Harm & Help scenarios require approaching victim, and Harm process focused on actions (whereas Help focused on feelings)
- Common Utilitarian Substrates** (DLPFC & ACC) for both Help and Harm at level of individual differences: same controlled processing
- Differences suggest distinct evolutionary & developmental paths for prescriptive and proscriptive morality