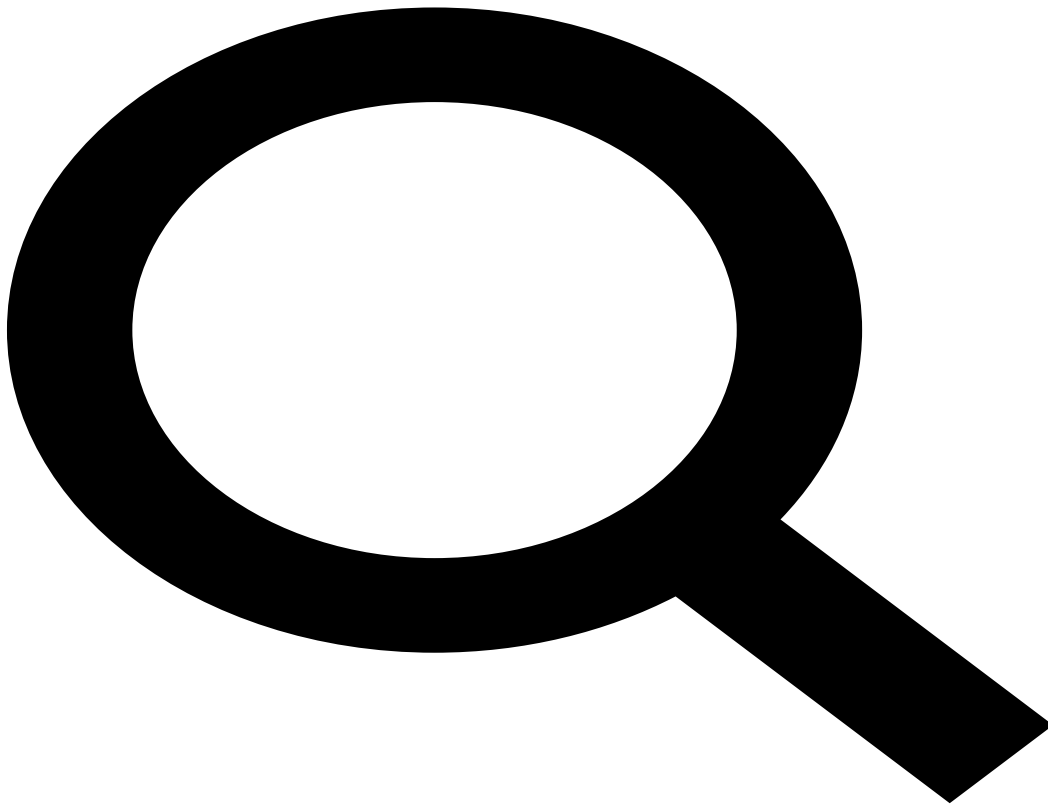


Human social life heavily relies on our ability to understand other people's beliefs, intentions, actions and sensations. One way to explain this ability has been to posit a capacity for empathy. [Empathy is often characterized as the ability to "put oneself into another's shoes", or in some way experience the outlook or emotions of another being within oneself.](#) This idea has been supported by many recent brain imaging studies (the kind debated [here](#) last month) that have shown overlapping activation patterns when subjects feel their own emotions and observe similar emotions in others. The theory of "embodied simulation" postulates that such overlap reflects an automatic resonance to others' affective states, allowing implicit affect sharing and empathy (Gallese et al., 2004; Gallese, 2007; Keysers and Gazzola, 2006). Thus, according to the theory of "embodied simulation", resonance seems to be the "cement of society" (to use Hume 's famous expression) : the mechanism that enables human interaction, sympathy and morality.

A recent study by Danzinger and colleagues ([here](#) is a gated version) challenges this theory by looking at a unique population - individuals with congenital insensitivity to pain. Contrary to what the theory of resonance would have predicted:



"Patients with the rare syndrome of congenital insensitivity to pain cannot rely on "mirror matching" (i.e., resonance) mechanisms to understand the pain of others. Nevertheless, they showed normal fMRI responses to observed pain in anterior mid-cingulate cortex and anterior insula, two key regions of the so-called "shared circuits" for self and other pain."

Is resonance really the cement of society, or do we understand others' interests with the help of more high-level and abstract cognitive process?

