ME, MYSELF AND YOU: NEUROPSYCHOLOGICAL RELATIONS BETWEEN
SOCIAL EMOTION, SELF AWARENESS, AND MORALITY

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ABSTRACT

Social emotions about others’ mind states, e.g. compassion for psychological pain or admiration for virtue, are an important foundation for morality because they help us decide how to treat other people. Although these emotions are ostensibly concerned with the mental qualities and situations of others, they can precipitate intimately subjective reflections on the quality of one’s own social life and mind, and via these reflections incite a desire to engage in meaningful moral actions. Our interview and neural data suggest that the shift from social emotion to introspection may be facilitated by conscious mental evaluation of emotion-related visceral sensations.
Social emotions about others’ mind states, such as compassion for psychological pain or admiration for virtue, are important foundations for morality because they teach us about the social world, help us decide how to treat other people, and motivate us to behave pro-socially in our own lives. Despite their inspirational power, however, little is known about how emotional reactions to other people’s social and psychological situations, reactions that have been described as “self-transcendent” (Haidt & Morris, 2009), transform into personal moral resolve. How does learning about another’s misfortune, for example, lead us to be grateful for our own good circumstances? How does hearing of another’s triumph despite difficult obstacles rouse us to lead a more worthwhile life?

Our data from emotion induction interviews shows that people in strong states of social emotion about a stranger’s compelling situation sometimes spontaneously report introspecting about the meaning of their own actions and decisions in social relationships, as well as emotion-related visceral and bodily sensations. Here I speculate that the process of consciously evaluating emotion-related bodily sensations may play a facilitative role in the translation of social emotions about other people’s circumstances into introspection about the morality of one’s own social behavior. Relating psychosocial and neural evidence, I hypothesize that evaluating emotion-related visceral sensations in relation to personal memories may effectively shift a person’s attention inward, away from the immediate social and physical surroundings and toward the feeling of the internal, psychological “self,” or the “real me.” I am not suggesting that these evaluations are necessary or universal for appropriate social emotions or moral decisions. Instead, I conjecture that social emotions about other’s mind states may function as a vehicle for
examining the morality of the psychological self—in essence, using memory and
somatosensation to build a heightened, internally focused awareness that motivates moral
sentiments and actions toward others.

**Social emotions inspire moral intents: the example of compassion**

Consider the reaction of one experiment participant, “John,” to learning a true
story meant to induce compassion. The story is about a young boy who grew up in a
small industrial city in China during an economic depression that often left him hungry.
The boy’s father had died just after his son’s birth, leaving his mother to work long hours
as a laborer. John is shown a video clip in which the boy’s mother describes how, one
winter afternoon, she found a coin on the ground and used it to buy warm cakes for her
son, who had been all day at school with nothing to eat. The mother recounts how her son
had been so hungry, yet he had offered her the last cake, which she declined by lying that
she had eaten already. After the video, the experimenter asks John how the boy’s
situation makes him feel, to which John responds:

“[Of the stories featured so far in the experiment] this is the one that’s hit me the
most I suppose. And I’m not very good at verbalizing emotions. But… um… I can
almost feel the physical sensations. It’s like there’s a balloon or something just
under my sternum, inflating and moving up and out. Which, I don’t know, is my
sign of something really touching… And, so, the selflessness of the mother… and
then also of the little boy. You know, having these wonderful cakes that he never
gets to have, and he still offers them to her… and then her turning them down,
is… uh… [long pause] It makes me think about my parents, because they provide
me with so much and I don't thank them enough, I don't think… I know I don't.

So, I should do that.”

In answering the straightforward question of how this story makes him feel, John reveals a common pattern in which complex social emotions about the mind state of another person are actively constructed. John begins with a general statement of the emotional impact of the story (it “hits” him), which he recognizes by the visceral sensations in his chest (“a balloon..under my sternum”). He then reviews the critical facts of the story (what the protagonists did and did not eat), relates the protagonists’ actions to qualities of mind (“selflessness”), and interprets the significance of declining the cake in light of the broader physical context of famine (“cakes that he never gets to have”). Finally, after a reflective pause, John’s compassion culminates in a newfound intent to express gratitude to his own parents. Like many experiment participants reacting to emotional social stories, John’s moral intent to act prosocially, in this case to better appreciate his parents’ sacrifices on his behalf, appears to be built from actively coordinating relevant pieces of information about other peoples’ social and physical situations, evaluated in light of the implications for his own situation and relationships and his commensurate bodily feelings.

**From social emotion to self awareness, and from there to moral intent**

Critical to understanding the significance of social emotions for moral inspiration is the notion that complex social emotions like compassion or admiration for virtue are not automatically induced, but are built from active mental deliberations on relevant world and social knowledge (Immordino-Yang, 2010). These deliberations can result in a cascade of mental and bodily changes, or neural simulations of bodily changes, that
constitute what has been called the “emotion” proper (Damasio, 1994/2005). But how do participants like John transition from a social emotion focused on other people to a moral intent to improve their own behavior? And what might be the relevance of the social emotion construction process for facilitating this introspective shift?

To hazard a guess at these questions, it is instructive to consider the neural correlates of these emotions in relation to their psychology. Using a compassion- and admiration- inducing procedure, Immordino-Yang et al. (2009) found that admiration for virtue and compassion for social/psychological pain strongly recruited the posterior/inferior sector of the posteromedial cortices, an ensemble of mesial parietal and posterior cingulate cortices involved in high-level association of interoceptive information from visceral sensation and regulation. Functionally, this area is involved in the default network, which has been suggested to correspond to the feeling of self, personal salience, and high-level consciousness (Damasio & Meyer, 2009); it constitutes a highly convergent-divergent neural zone (Meyer & Damasio, 2010; Hagmann, et al., 2008) whose activation is suppressed during tasks requiring externally focused attention (Buckner, Andrews-Hanna, & Schacter, 2008), but which has been consistently implicated in tasks involving moral judgment (Greene, Sommerville, Nystrom, Darley, & Cohen, 2001), daydreaming (Christoff, Gordon, Smallwood, Smith, & Schooler, 2009), and episodic memory (Wagner, Shannon, Kahn, & Buckner, 2005).

Although the psychosocial analyses are preliminary, our data from both the U.S. and China suggest that it is only after grappling with the relevant information about the protagonists of a true story and reporting a strong emotional reaction that participants sometimes spontaneously turn their evaluative stance inward to judge the quality of their
own minds, sometimes explicitly in light of the standard set by the protagonists. Could it be that as an aftereffect of having engaged in the subjective deliberations that lead to a social emotion like admiration or compassion, participants may be left with a heightened perception of interoceptive awareness that facilitates introspection about the psychological self? One experiment participant, when reacting to a social story meant to induce admiration for virtue, described her experience as one of becoming “more sensitive to the temperature inside you…a visceral reaction that feels like an emotional alertness…it makes me want to spend a year or two [dedicated to helping this person’s cause].” Perhaps the act of feeling and representing one’s emotion-related visceral sensations contributes in a special way to inspiring the moral intent to engage in personally meaningful social actions?

Examining participants’ spontaneous behaviors during pre-scan interviews against the backdrop of the neural evidence reveals an additional intriguing clue: in the late phase of a social emotion participants often pause, turning their attention inward before transitioning to personal inspiration. In John’s example, at the critical transition point between his social emotion about the protagonists and the moral implication for his own life, John appears to briefly withdraw from the interaction with the experimenter and blankly gaze into his lap. He emerges from this reflection with a spontaneous report of having evaluated his own relationship with his parents—an evaluation which inspires gratitude and a promise to behave prosocially. This is just as would be expected were default network brain activity invoked, allowing the neural and psychological construction of self awareness via the calling up of interoceptive information.

Of conscious minds in feeling bodies: Musings on the moral self
Social emotions guide critical aspects of social behavior, and are an important foundation for morality in day-to-day life. How is it that our emotional evaluations of other people’s psychological situations can incite us to examine the moral foundations of our own social behavior?

Here I argue for the possibility that visceral/interoceptive processes may form a critical link between social emotions and personal inspiration toward moral actions, because they (1) are involved in the feeling (or simulated feeling) of bodily changes during emotion; (2) are critical for the neural construction of psychological self awareness. Using the representation of bodily feeling as a platform, vicariously conjuring our subjective and private imaginings of another person’s mind may serve to heighten our own sense of self in relation to social responsibilities. In this perspective, morality and social emotion are the yin-yang of high-level consciousness, pushing and pulling on the substrate of our own neural and visceral, mental and bodily selves.

References


