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Moral Emotions from the Frog's Eye View

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Abstract

To understand the structure of moral emotions poses a difficult challenge. For instance, why do liberals and conservatives see some moral issues similarly, but others starkly differently? Or, why does punishment depend on accidental variation in the severity of a harmful outcome, while judgments of wrongfulness or character do not? To resolve the complex design of morality, it helps to think in functional terms. Whether through learning, cultural evolution or natural selection, moral emotions will tend to guide behavior adaptively in ordinary social situations. Thus, considering possible functions of morality can help us to comprehend its form.

Keywords
accidents, adaptation emotion, function, morality, politics

Early studies of the frog's eye faced a conundrum: retinal ganglion cells were not passing sensible messages to the frog's brain. Everyone knew the brain needed a pixel-based representation of the visual scene, just like a camera's snapshot. But some retinal ganglion cells fired when large objects moved slowly, while others fired when small objects moved quickly. How could the frog's brain develop a snapshot from inputs like those?

The solution came in the first two sentences of a classic article (Lettvin, Maturana, McCulloch, & Pitts, 1959): "A frog hunts on land by vision. He escapes enemies mainly by seeing them." Unlike cameras, frogs are not interested in snapshots. Their eyes have two principle purposes: identifying prey (small objects moving quickly) and predators (large objects moving slowly). Only by understanding the functional design of the frog's eye was it possible to understand its neural mechanisms.

There is an important lesson here for any psychological inquiry. We are rightly wary of functional "just so" stories, but the purpose of Lettvin's article was not to prove the adaptive value of eating flies by studying the retina. The inference worked in the opposite direction: functional thinking provided a framework to understand mechanism. Form follows function, and studies of moral emotions cannot ignore their functional design.

A case in point is research on the distinct moral "foundations" of liberals and conservatives (Graham, Haidt, & Nosek, 2009). Liberal morality focuses principally on issues of harm and fairness. Conservative morality shares those concerns, but also focuses on issues of authority, in-group coalition and purity. The evidence for this moral divide is compelling, but also mystifying. Why does an ideological fault line lay at authority, in-group coalition and purity?

Haidt and Kesebir (2010) propose a "social functionalist" explanation, arguing that liberal and conservative moralities are suited to distinct social arrangements. Liberal morality fits modern urban life: rules governing harm and fairness effectively scaffold interactions between autonomous strangers interacting as coequals. Conservative morality fits smaller scale group life: rules governing authority and in-group coalition, in particular, effectively scaffold interactions between individuals in well-defined community roles interacting repeatedly. Haidt and Kesebir argue that cultural evolution shaped these distinct moral frameworks.

There is much to be said about this hypothesis, and much to like. Right or wrong, it clearly provides structure to further inquiry at the mechanistic level. For instance, an additional feature of small-group life is the importance of reputation. Reputation is relatively less important in large-group life because repeated interaction occurs less frequently. This predicts that moral concerns about authority and in-group coalition should covary with moral concerns about reputation, and might constitute additional "foundation" of moral psychology.

In this case a mechanistic puzzle gave rise to a sensible functional hypothesis, which in turn generates productive

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mechanistic work. Haidt and colleagues (Graham et al., 2009; Haidt and Kesebir, 2010) write with an interest in the functions of human morality, but their ultimate purpose is not to deduce the selective pressures of social life on the Pleistocene Savannah (or of modern social life in Savannah, Georgia, for that matter). Rather, it is to understand psychological mechanisms underlying moral thought and behavior, in service of which functional thinking is indispensible.

A second example is the problem of "moral luck." Why does a reckless driver who hits a tree get a ticket, while an equally reckless driver who hits a pedestrian gets years in prison? (Nagel, 1979). From one perspective, their identical behavior must be assessed equivalently. But from another perspective, it seems wrong to send a person to jail for hitting a tree, or to let a person off with a ticket for killing a man.

These dueling perspectives match people's judgments of "deserved punishment" versus "wrongness." For punishment judgments outcomes matter a lot, even when they are a matter of chance (Carlsmith, Darley, & Robinson, 2002; Cushman, 2008; Cushman, Dreber, Wang, & Costa, 2009). But for wrongness judgments outcomes hardly matter at all, and people instead focus on intentions (Cushman, 2008). This mismatch between punishment and wrongness presents a psychological puzzle. Why is our mind built with competing moral perspectives?

Research on the function design of punishment has been spearheaded by evolutionary game theory (e.g., Boyd & Richerson, 1992; Clutton-Brock & Parker, 1995) and experimental economics (e.g., Fehr & Gachter, 2002). There is lively debate on many details, but there is general agreement that punishing somebody pays when it successfully alters their future behavior, reducing the likelihood of further harm. Thus, it would make sense to punish people for accidental outcomes if doing so effectively changes their future behavior.

A recent laboratory study shows that it does (Cushman & Costa, 2011). In essence, accidents are teachable moments. You may not have intended to knock coffee onto my lap, but my punishment can teach a valuable lesson: I don't like burns, so take greater care. While the punishment of accidents is guided by blindly retributive motives, it serves the farsighted function of modifying others' behavior.

But why, then, do we have a distinct concept of moral wrongness that depends on intent alone? Here, again, a functional perspective helps. When social partners leverage reward and punishment to modify your behavior it pays to regulate your own actions accordingly (Boyd & Richerson, 1992). Self-regulatory mechanisms ensure that doing wrong feels bad, while doing right feels good (e.g., Blair, 1995; Damasio, 1994; Fehr & Schmidt, 1999; Trivers, 1971).

Possibly, judgments of third-party wrongness are derived from self-regulatory mechanisms. For instance, if you want to know whether it was wrong for a father to slap his child, you could imagine doing it yourself. If self-regulatory emotions are triggered, you conclude that the father's act was wrong (Cushman & Greene, in press; Greene et al., 2009). An elegant illustration of this mechanism comes from studies of incest (Lieberman, Tooby, & Cosmides, 2003). The same factors that predict people's disgust at the thought of committing incest themselves—for instance, duration of cohabitation with their sibling—also predict their moral judgment of *unrelated others* engaging in incest. Their own mechanisms of self-regulation serve as a basis for judging others.

Notice how "moral simulation" treats the reckless drivers considered above. Whether the driver hits a tree or a pedestrian, the simulated behavior is identical: reckless driving. When we regulate our own behavior, we don't know for sure what the outcome of our actions will be. The basis of self-regulation can only be our beliefs, desires and choice of action—in a word, intent. Thus, when our judgments of others depend on moral simulation, our focus will be on their intent. Here, again, a claim about functional design makes clear mechanistic predictions. For instance, when people make moral judgments of others, do they indeed imagine performing the act themselves? Is this mechanism correlated with intent-based moral judgment?

I have argued that functional thinking is necessary to understand moral emotions. The purpose of functional thinking is not to spin a yarn about the selective pressures of yesteryear. Rather, it provides an organizing framework for understanding mechanisms and devising new hypotheses. In short, when trying to understand our moral motivations, it helps to take a frog's eye view.

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