

## **Biology, Emotions, and Law**

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This précis provides a few words of background and overview, which elaborate on the talk abstract prepared for the February 8-9, 2007, Conference *Law and the Emotions: New Directions in Scholarship*. A more detailed account of some of the material only briefly raised here appears in Jones & Goldsmith, *Law and Behavioral Biology*, in volume 105 of the *Columbia Law Review*.<sup>1</sup>

Law can be conceived as a lever society uses in an attempt to shift human behaviors in directions they would not otherwise go on their own. The effectiveness and efficiency of that lever depends on the solidity of a sound fulcrum. In this case, the fulcrum is a behavioral model that integrates our best understandings of how humans respond to environmental changes, including those resulting from legal interventions.

Improving law's behavioral model fulcrum requires integrating the social sciences and the life sciences into a seamless behavioral science. From a life science perspective, all behavior arises from human potentialities that exist where genes and environments intersect. Human behavior is neither genetically nor environmentally determined, but rather arises from the admixture of the two, which meet in the biological process of

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<sup>1</sup> Owen D. Jones & Timothy H. Goldsmith, *Law and Behavioral Biology*, 105 *Columbia Law Review* 405-502 (2005), available at: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=688619](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=688619).

development as humans grow and learn, and which continue to influence all human behaviors across the course of life.

Whatever emotions are, and however we might define them, they exist as states of the human nervous system, most particularly the brain. While it was at one time common to think of the brain as wholly programmable, we now know that view to be too simplistic. The brain, like other organs of the body, is the product of a distinct evolutionary history that humans share. And the operation of various evolutionary processes, including (but not limited to) natural and sexual selection, inevitably leaves us with a brain that is functionally specialized in some ways, notwithstanding – and frequently even facilitating – its remarkable capacity for flexibility.

There are many mysteries to the mind. And there is much we do not know. But we do know that evolutionary processes tend to leave species equipped with some behavioral predispositions that make certain behaviors, in reaction to various suites of environmental circumstances, more probable than others. Sometimes those probabilities are skewed gently, and sometimes they are skewed sharply, most likely as a function of the extent to which various states of the nervous system increased or decreased the probability of survival and reproduction across evolutionary time.

Thus, from a life science perspective, emotions can often be seen as evolved and efficient short-cut solutions to very important, commonly encountered problems, which demand attention and response. Fear, anger, love, lust, disgust, jealousy, and similar states of being are not ordinarily invoked by coolly rational deliberations. Instead, they are passions aroused by complex contexts – but often contexts, such as threats to body or status, possible infidelities of a mate, or discovery of infection-inducing conditions, to

name but a few – that have long been staples feature of the human condition, and which each impose heavy costs on those with a laissez-faire attitude.

Theory suggests that natural selection will have favored any randomly arising attitudinal predispositions resulting in behaviors that, more often than not, solved such problems more efficiently than contemporaneously existing predispositions. And the triangulation of theory with empirical realities, such as widespread similarity in these emotions across cultures, widespread similarity in these emotions across known human history, early emergence of these emotions developmentally, appearance in other species of similar behaviors under similar conditions, functional localization of brain activity revealed by brain-scanning, a close fit between the problem to be solved and the behavioral response, and the like, combine to create a strong presumption that evolutionary processes have helped shape the dimensions of these and similar human emotions.

The precise dimensions of these emotions are not known. And emotions are more easily discussed than defined. But the biological perspective on emotions has helped clarify that what we think of as emotional activities of the brain are not easily divorced from deliberative reasoning. We know from both introspection and observation that our human experience is infused with emotional content. At times, we have tried, as individuals or societies, to control emotions with reason, considering emotions to be improper deviations (some with consequences for the legal system) from purely rational calculation. But a broader and more accurate view is that emotions and reasoning each inevitably and reciprocally affect the other.

Emotions arise from evolutionarily old parts of our mammalian brain. They often supply us with wants and desires that tended to yield behaviors that tended, in turn, to be adaptive. Pursuing those desires often involves conscious planning. Conversely, consciously considering various mental scenarios can reciprocally generate emotional responses. This leaves emotions so inextricably woven into our rational cognitive reasoning that, at least in the domain of social relations, we do very little that is not influenced by feelings.

Of what relevance is this to law? It is relevant when we need to understand and anticipate human behaviors not already explicable by existing models, such as neoclassical economic models. It can also be useful, as argued in the article cited above, in providing or augmenting the theoretical foundation and predictive power of existing models. It can help us improve our abilities to anticipate how people will behave in response to legal interventions. It may help us improve, refine, or more narrowly tailor our legal tools for achieving what society asks law to achieve. And it can help us understand when and why people will deviate from rational choice predictions.

Overall, this life science perspective, among others, may help deepen our understanding of human behaviors, including their emotional underpinnings. And it may thereby aid our joint efforts to supply a robust model of human behavior to serve as a sound and stable fulcrum for the efficient and effective lever of law.