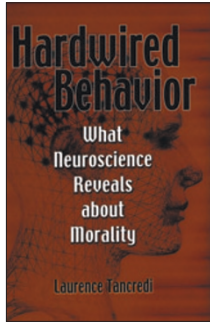


Morality and the brain: hardwired yet flexible



Hardwired Behavior: What Neuroscience Reveals about Morality

By Laurence Tancredi

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Reviewed by Judy Illes

How do the brain, individual values and culture interact to form a moral society? Can neuroscience trump notions of free will? These are among the fundamental challenges of human moral behavior that Laurence Tancredi takes on in *Hardwired Behavior: What Neuroscience Reveals about Morality*.

I began reading this book while waiting for the curtain to rise on *Hannah Senesh*, a play by Aaron Megeed that tells the story of a young woman who leaves Hungary for what was then Palestine in the late 1930s only to return in 1944 as a member of the partisan resistance movement. She is compelled by her rage over the Nazi persecution of Jews, impatient with their helplessness, and driven by a yearning to save as many as possible from death. The risks she takes far exceed any possibility of success. The story (and her life) ends tragically with her execution.

What forces underlie such a profound emotional response and commitment to moral goodness at any risk? Many answers to this question may be sought from the highly studied counterpart of such moral exemplars—including the sensational cases Tancredi uses to illustrate moral wrongdoings, from the relatively benign (socially dubious behavior) to frankly sociopathic acts of violence against others. Through his personal lens as a psychiatrist and legal scholar, Tancredi weaves such narratives throughout the book to achieve three goals: to examine the history of thinking about morality and its development through childhood, to argue for an increasing acceptance of the physicalism of morality supported by advances in neuroscience, and to speculate on how this physicalism will affect human interactions, individualism and the diversity of society.

Tancredi pursues these goals in 12 chapters that cover topics from basic principles of neuroscience, consciousness, agency and choice to how morality goes awry when the hardwiring for these mechanisms breaks down. He argues that rules of conduct have emerged over time to maximize harmony within communities and minimize dissension.

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Morality is about how people relate to one another—although, even in the absence of another person, some acts may still arguably be immoral. Core values may vary across societies, yet they are universally grounded in relationships between generations. In a strange twist, some behaviors—like those of Hannah Senesh on the one hand or significant deception on the other—become criminalized because of their disruptive potential. Being moral is not easy, and early exposure to moral norms is critical.

Like Noam Chomsky, who argues that humans are hardwired for language syntax, Tancredi argues the case for hardwired moral behavior. He writes that neuroscience has moved away from Freud's idea that morality is imposed purely from the outside through learning and experience to the belief that the capacity to react in certain ways is biological and transferred genetically. Morality arises from the interplay of virtually all brain areas and the environment. New techniques such as neuroimaging may open a window to the understanding of hardwiring and to a means of rationally addressing the concept of responsibility. However, although a delusional individual may have a brain-based motivation for killing another person, such as believing that it will save that person's soul, no form of neuroimaging can ever provide entirely exculpatory explanations. Tancredi suggests that although the brain may direct the mind, and genetics creates the foundation for the wiring, environment and experience drive the fine tuning.

Hardwired Behavior does not bring either neuroscientists or non-neuroscientists to a new level of understanding about the brain and morality, but it is a genuine contribution to increasing public understanding of neuroscience and moral behavior, in the genre of Michael Gazzaniga's *The Ethical Brain*. In addition to providing content that is easy to read, the author makes his commitment to communication evident in early chapters of the book with simple illustrations of relevant neuroanatomy, such as prefrontal and limbic circuitry accompanied by clear explanations about the precision with which these areas need to function to mediate behavior, a straightforward glossary of terms, and a lengthy but excellent notes section.

The last chapter invokes some imagination about hardwiring and prospects for a politically controlled moral America. The "fast-forward technique" that Tancredi uses is reminiscent of Carl Zimmer's jump to modern neuroimaging from an exploration of sixteenth- and seventeenth-century contributions to the neurological sciences in *Soul Made Flesh*. Neither the technique nor its point appealed to me in this book, but I can appreciate that they may be compelling for others.

This roughly 200-page book concludes, "It is hoped that this goal of utilizing findings especially from neuroscience and genetics to achieve a morally harmonious society will be pursued with intelligence and caution." Although it is not clear who the "It" is in "It is hoped...", the close alignment of neuroscientific findings about hardwired behavior with ethical and intelligent thinking that respects and honors personal and cultural values is vital. The concept of close alignment is one with which this reviewer agrees wholeheartedly and one that should be embraced by all neuroscientists. ■