

Book Reviews

Harvard was considering plans to build a new genetic engineering lab. He writes,

At the end of May 1976, there was a university-wide meeting to discuss the plans. This was attended by a Cambridge councilor, Barbara Ackermann, who just happened to have watched *The Andromeda Strain* on television the night before. *The Andromeda Strain* film she watched was based on the 1969 book by Michael Crichton that depicts a deadly outbreak of a novel pathogen. Alarmed by what she heard at Harvard, Ackermann raised the issue with fellow councilors. (p. 92)

The resulting delays to the building plans were so extensive that “by the time the building work was completed [the scientists were] able to do the experiments in ordinary laboratory space” (p. 97).

The author is not a passive narrator of the story. He has a clear perspective and is unafraid to share it. For example, in chapter 13, “Aftermath,” when discussing people who support human embryo modification, Cobb writes,

There is one gang of fantasists who mix cryptocurrency funding and transhumanist nonsense in a toxic, nauseating nightmare, claiming that they will use CRISPR germline editing to produce babies who will live to be “super-centenarians.” (p. 274)

Throughout the book, Cobb’s genuine concerns about advancements in genetic engineering are rooted in the same fear that has stalked the discipline since its inception: safety. Four times in this discipline, scientists have voluntarily paused their work and embraced a moratorium in order to develop means to conduct the research safely.

While the subtitle of the text describes the book as a “moral history,” it offers more of a history of insufficient moral consideration regarding important moments in molecular biology. The field has been willing to consider how to progress safely, but there has been surprisingly little consideration of what experiments should not be done. As a book of history, it is not Cobb’s responsibility to offer his readers a robust moral framework for evaluating advances in gene editing. Instead, the history he recounts illuminates the need for such a framework.

The striking title of the book comes from an essay by Steward Brand who said, “We are as gods and might as well get good at it” (p. 338). Cobb agrees, and adds, “In genetic terms at least, being a god is relatively straightforward these days; getting good at it is another matter” (p. 338). In recounting the moral history of this field, Cobb encourages us, the next generation of scientists taking up the discipline, to remember to consider why we do our experiments, not just how they are done. In the closing chapter, he implores us to remember that in genetic engineering, “we have a choice whether to employ it or not, whether to permit its development or not. Just because we can do something does not mean that we *should* [emphasis original]” (p. 362).

Reviewed by Clayton Carlson, Professor of Biology and Chair of the Natural Sciences, Trinity Christian College, Palos Heights, IL 60463.

EVOLUTIONARY THEORY

DOI: <https://doi.org/10.56315/PSCF12-24Spikins>

HIDDEN DEPTHS: The Origins of Human Connection by Penny Spikins. York, UK: White Rose University Press, 2022. xiii + 456 pages. Paperback; £29.15. ISBN: 9781912482320. Electronic: Free under Creative Commons Attribution + Noncommercial 4.0 license, <https://doi.org/10.22599/HiddenDepths>.

In *Hidden Depths*, Penny Spikins explores the evolution of the positive emotional aspects of our humanity in the context of our relational connectedness with others. As an archaeologist, she documents the evolution of humans from the physical evidence found at archaeological sites, which she then relates to our modern behavior, to the behavior of hunter-gatherer cultures, and to past humanoids such as Neanderthals, as well as to the evolution of animals, of other primates, and of other social mammals such as dogs. By focusing on the evolution of positive emotions, for example, generosity, empathy, tolerance, and altruism, she gives the lie to Tennyson’s description of nature as red in tooth and claw.

The book’s layout is unusual: each chapter has its own abstract, summary, and reference list, somewhat like a series of journal articles put together into a volume; however the overarching work is coherent—the book builds its case in a logical and informative manner—and the issues are addressed well. The nine chapters are laid out in three parts: the first deals with the positive emotions within groups; the second addresses the benefits and costs of these positive emotions beyond immediate groups; and the last explores other potential human evolutionary pathways.

In Part 1, chapter 1, Spikins discusses the neurobiological basis for compassion and empathy, along with their evolutionary basis and advantage. Developing empathy in close-knit family groups leads to generosity and caring behavior. Human empathy is compared to empathic expression in primates, and to convergent evolution in other social species. Next, Spikins provides the archaeological evidence that human ancestors cared for their wounded and ill (as documented in the bones uncovered today). I found this second chapter provided essential insight into humanity’s deep history with ideas I have not seen elsewhere. Then, in the third chapter, the impact of human interdependence on these positive emotions is reviewed, leading to a discussion of the importance of trust. These three chapters are based on early hominoid evidence, when we started diverging from other primates. The first part of the book thus covers our history from about two million to 300,000 years ago, when modern humans began to emerge.

Part 2 discusses the importance of positive human emotions in interactions with larger communities and how we moved from seeing others as a threat to seeing others as an opportunity for benefit, leading to increases in tolerance. Chapter 4 discusses the physiological changes that led to fewer avoidance behaviors and more approach behaviors.

As an example, the physical evidence that artifacts were traded across large distances is fascinating, implying that local groups had interactions with many distant people; such interactions first require approach behaviors. In chapter 5, Spikins argues that along with approach behaviors comes an increase in tolerance, also called “self-domestication.” While largely beneficial, self-domestication also has a cost, in that it causes vulnerabilities such as specific emotional disorders when our needs for affiliation are not met. These unmet needs can lead to attachment to physical artifacts that possess no obvious function, but such attachment serves as a compensatory process (a modern example being teddy bears). These nonfunctional objects started to appear in the archaeological record about 45,000 years ago. In the next chapter, the parallel development of positive relationships with dogs (descended from wild wolves) suggests that dogs have undergone similar changes in attachment behaviors, becoming more tolerant and caring toward humans. For humans, forming bonds to dogs provides another way for us to address our emotional vulnerabilities.

In Part 3, Spikins lays out the argument that humanity’s evolutionary history took one of several possible alternate pathways. She supports this point by comparing the emotional and social differences between chimpanzees and bonobos, as well as between wolves and dogs. In the last chapter, Neanderthals are discussed, and proposed as one of those alternate pathways; however, among Neanderthals, their emotional and social interactions were limited to small, closely related groups and so did not extend to larger communities. The author suggests that the more limited, close-knit community relationships in Neanderthals ultimately proved less successful than the broader social and emotional relationships of our direct ancestors.

The integration of biological evidence from other species, primates, and wolves, along with the neurobiology of our emotions and the integration of the hard evidence from archaeology, makes this book a worthy companion for other books that have explored our evolutionary history. Its emphasis on the benefits and costs of positive emotions such as empathy, compassion, and tolerance stands in helpful contrast to similar books that pay more attention to aggression and testosterone.

Like many books that cover related material (such as Frans de Waal’s *Mama’s Last Hug* and Robert M. Sapolsky’s *Behave: The Biology of Humans at Our Best and Worst*), this volume was written without any mention of the Christian faith or even religion. Individuals looking for threads of how our faith fits into our evolutionary history will need to look elsewhere (such as in Chris Barrigar’s essay book review in the March 2024 issue of this journal).

While I found this volume an enlightening and valuable read, the book raised some issues for my Christian faith. One common motif in Christianity is that we are the crown of creation—a view which is challenged by the evolutionary story described in this book. For instance, human history is a sequence of adaptations and changes that often

appear randomly. As well, our relations with other humanoids, and the discovery that some of our genes come from Neanderthals, suggest that we are a complex branch in the tree of life, as indicated by Darwin. An evolutionary account is also consistent with flaws in our design, such as lower back problems that many of us deal with! Each of these raises a challenge to the motif that humanity is the crown of creation.

This is an excellent up-to-date review of the archaeological evidence of how human evolution developed the connections that underlie our behavior. While unfortunate in its lack of attention to influences of religion, this book makes a valuable addition to our evolutionary history. Particularly important is the integration of the hard evidence from archeological findings with the soft evidence relevant to the emergence of positive emotions, including discussion of emotions in the wider animal world. This volume provides much important material that needs to be considered when integrating faith with science.

Reviewed by Roelof Eikelboom, Emeritus Professor of Psychology, Wilfrid Laurier University, Waterloo, ON.

DOI: <https://doi.org/10.56315/PSCF12-24Falk>

ON THE (DIVINE) ORIGIN OF OUR SPECIES by Darrel R. Falk. Eugene, OR: Cascade, 2023. 263 pages. Paperback; \$36.00. ISBN: 9781666757019.

Did the evolution of *Homo sapiens* depend causally on divine activity? This is the daring question (!) which seasoned biologist, former president of BioLogos, and influential Christian scholar Darrel R. Falk explores in his most recent book. Arguing in favor of divine activity, Falk is careful to avoid both crudely interventionist and passively deistic frameworks. Instead, Falk seeks to honor and maintain the integrity and consistency of the created order (the regularity of its laws and processes) as well as a traditional Christian view of God’s providence in which God is personally present and active within the cosmos, intimately related to his creatures and promoting their flourishing.

Falk’s proposal focuses specifically on the unique quality of the social nature of human beings. Grounded biologically and emerging from a complex evolutionary history, which Falk narrates in fascinating detail, this unique relational nature enables human awareness of other minds (i.e., they can recognize, envision, and empathize with the consciousness, thoughts, intentions, and motivations of others) and grants them unparalleled capacities for communication and cooperation toward common goals. It also enables the kind of spiritual awareness that makes possible a relationship with the divine Spirit.

Falk continually draws his scientific narrative into creative dialogue with the Christian story, pointing out deep resonances and specific points of connection along the way. Christian scripture and tradition bear witness to a God whose fundamental nature is Love. This God lovingly and non-coercively draws and encourages his human creatures toward the qualities and dispositions of the divine