

AUTUMN BOOKS

The Chomsky of morality?

A view of morality as the product of an innate mental faculty — rather like language.

Moral Minds: How Nature Designed Our Universal Sense of Right and Wrong

by Marc D. Hauser

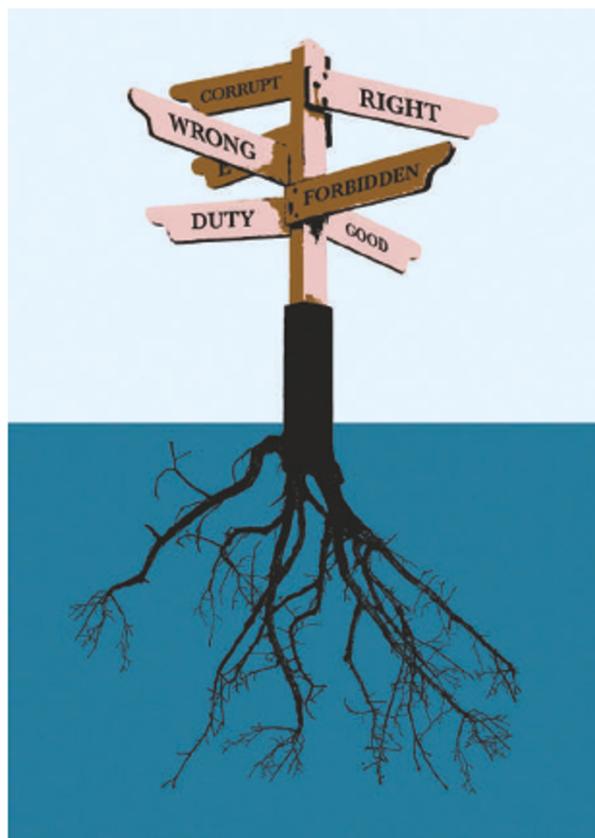
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Paul Bloom & Izzat Jarudi

In *Moral Minds*, Marc Hauser makes an audacious claim about moral thought. He argues that morality is best understood in much the same way as Noam Chomsky described language: as the product of an innate and universal mental faculty. For Hauser, moral intuition is not the product of culture and education, nor is it the result of rational and deliberative thought, nor does it reduce to the workings of the emotions. Instead, it is human nature to unconsciously and automatically evaluate the moral status of human actions: to judge them as right or wrong, allowed or forbidden, optional or obligatory.

As Hauser is careful to point out, he is not the first to make the leap from a chomskyan theory of language to a chomskyan theory of morality: this analogy was proposed by the political philosopher John Rawls, the legal scholar John Mikhail of Georgetown University in Washington DC, and by Chomsky himself. But *Moral Minds* is the first detailed exploration of this idea. It is a trade book, highly accessible to a general audience and drawing on diverse examples from literature, popular culture and history. But it is also a deeply significant intellectual contribution: everything that's done in the new science of moral psychology in the coming years is going to be a response to this important and enjoyable work.

Certain deep parallels between language and morality make Hauser's proposal worth taking seriously. Chomsky has long observed that language is a system of knowledge, but what we know (competence) is different from how we use this knowledge in everyday life (performance). Linguistic competence is also unconscious: every English speaker knows that something is wrong with the sentence "John seems sleeping," but only experts understand why. Similarly, moral intuitions are imperfectly linked to action — you can know the right thing to do but choose not to do it — and only experts can articulate adequate reasons for common-sense moral judgements. Finally, just as there are, arguably, innate principles of language, Hauser reviews an extensive array of cross-cultural, developmental, animal and



neuroscientific studies that support the existence of innate principles of moral thought.

In other regards, however, language seems very different from morality. For one thing, linguistic knowledge is distinct from emotion. You might be disgusted or outraged by what somebody says, but the principles that make sense of sentences are themselves entirely cold-blooded. Your eyes do not well with tears as you unconsciously determine the structural geometry of a verb phrase. By contrast — and Hauser wrestles with this throughout *Moral Minds* — even those who accept that some moral capacity is innate often see it as inextricably linked to emotion. Perhaps the universal core of morality is a set of emotional responses — disgust, shame, sympathy, guilt and so on — that are triggered by certain situations. This hypothesis is supported by clear demonstrations that, at least in some circumstances, emotion precedes intuition. The psychologist Jonathan Haidt of the University of Virginia in Charlottesville has found, for instance, that we are sometimes first viscerally shocked by

a scene ("Omigod, he's having sex with a chicken!") and then converge upon a moral judgement ("There should be a law against that.").

A different concern is that languages are combinatorial symbolic systems. An English speaker, for example, knows perhaps hundreds of thousands of words, and also knows principles of syntax that dictate how these words combine with one another to form sentences. There are other combinatorial systems in human cognition, such as number and music, but it's not clear that morality is one of them. Even if it is distinct from emotion, moral knowledge might be better characterized as a small list of evolved rules, perhaps simple (such as a default prohibition against intentional harm), perhaps complex (such as some version of the doctrine of double effect), but still very different in character from linguistic knowledge.

This combinatorial issue becomes relevant when it comes to differences in morality between people. The approach developed by Chomsky explains differences in human languages in terms of the parametric variation of universal principles. All languages have verb phrases, for instance, but in some of them, such as English, the object follows the verb, whereas in other languages the object goes first. Hauser makes an excellent case that the variation in moral systems is constrained in interesting ways, but he provides no evidence for parametric variation of the linguistic sort. Instead, as the cultural anthropologist Richard Shweder of the University of Chicago, Illinois, and others have argued, you get a difference in emphasis: all cultures value both purity and fairness, for instance, but some emphasize the former and others the latter. In addition, there can be dramatic variation in morality within an individual culture. As Hauser notes, for example, the culture of honour in countries such as Pakistan leads to a shockingly high number of 'honour killings' every year. However, that does not imply that all native Pakistanis agree

on the moral permissibility of honour killings as they do on the linguistic grammaticality of well-formed Urdu sentences.

These differences call into question how much insight the research programme developed by linguists can provide into morality. For instance, some arguments for linguistic innateness are based on assumptions about the generative nature of language; these might not export well to the moral domain. In fairness, though, it might be that nobody has found

these sorts of deep parallels because, before Hauser, nobody had really looked. Moreover, even if morality lacks certain interesting features of language, the very idea of an innate moral faculty is well worth investigating. Linguists have been exploring this idea for more than 50 years; in the study of morality, we are just getting started. ■

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Evidence for evolution

The Making of the Fittest: DNA and the Ultimate Forensic Record of Evolution
by Sean B. Carroll

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Brian Charlesworth

Sean Carroll begins his excellent book *The Making of the Fittest* by pointing out that about 50% of the American public doubt the truth of darwinian evolution, yet accept other aspects of biological science, such as the use of DNA in forensics. His aim is to use evidence from modern research on DNA to convince the general reader of "the case for biological evolution as the basis for life's diversity, beyond any reasonable doubt". He deliberately does not introduce any of the standard evidence for evolution as a historical process, and only briefly describes the use of DNA sequence data to reconstruct phylogenies. Instead, he uses a series of examples intended to provide compelling evidence for the basic processes involved in evolutionary change, with particular emphasis on mutation and natural selection.

The first example involves the extraordinary icefish of the Antarctic, which have lost their red blood cells and allowed their haemoglobin genes to decay. Carroll shows how this can be interpreted as an adaptive response to life in very cold water, with its high solubility of oxygen in water and high blood viscosity. There follows an exposition of Darwin's ideas about natural selection. Next comes a good but simplified account of the standard theory of selection on single mutations that enhance fitness,

showing that these can spread to high frequencies in times that are trivially short compared with the geological record. Carroll then applies these results to the way that a species of desert-living mouse has adapted to spatial differences in the colour of the ground, right down to the mutational changes that lead to darker coat colour.

Carroll illustrates the power of natural selection to generate evolutionary novelties by discussing duplications of the opsin genes involved in vertebrates' colour vision. Examples of genes and genomes that decay when their function is no longer maintained by natural selection illustrate how "selection acts



only in the present, and not as an engineer or designer".

A favourite ploy of creationists is to accept the possibility of small-scale evolutionary change by darwinian means, but to deny that this has any relevance to the evolution of complex structures or new species. Carroll does not discuss how new species evolve, but he examines the problem of complexity using Darwin's example of the eye, bringing in recent results on the molecular basis of eye formation. All this

is done well, although the tone is sometimes gratingly folksy, and there is some unevenness in the level of knowledge assumed (nanometres and natural logarithms are used without definition, for example). The explanations are clear and easy to follow, and the level of factual accuracy is very high, although effective population size is incorrectly used instead of population size in the book's only equation.

Carroll also turns his attention to irrational views on a variety of topics, including the genetics of Trofim Lysenko, chiropractic 'medicine', and opposition to vaccination. This paves the way for a discussion of disbelief in evolution, illustrated with some remarkable quotations from US anti-evolutionists. I am stunned by the ability of people to accept the absurd and discount the rational. Carroll seems confident that the mainstream religions do not reject evolution, but he fails to mention Islam, for which this is far from clear. He quotes with approval a statement by Pope John Paul II on evolution, but does not refer to Cardinal Christoph Schönborn's anti-darwinian diatribe in *The New York Times* on 7 July 2005. Carroll's final chapter warns of the dangers arising from climate change and the overexploitation of natural resources, where scientific advice is often ignored by governments because of economic considerations.

As Carroll rightly concludes: "Understanding and accepting evolution is a matter of adhering to the scientific process." It is extremely impor-

tant for scientists to fight the idea that evolution can be separated from the rest of science simply because of its unpalatable implications for traditional religious accounts of human origins. We have to insist on the fact that scientific conclusions are based purely on the study of nature, without reference to religious or other authority.

Carroll's book will certainly help the public to understand evo-

lution more clearly, but rational arguments are unfortunately unlikely to persuade those whose beliefs come from prior authority, whether represented by a fatwa, an encyclical, or the first chapter of Genesis. Wider public understanding of the nature of scientific evidence in general is urgently needed. ■

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