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Precis of *A Better Ape*

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Abstract
A Better Ape covers the evolution of morality from the birth of our ape family through the evolution of human species and all the way up to the development of modern societies. In this summary, we highlight several main elements of this account: the co-evolution of morality with intelligence and complex sociality; the role of social institutions and religious morality in the cultural evolution of behaviorally modern humans in prehistory; the increasing complexity of the moral mind through biological evolution in apes, gene-culture co-evolution in various human species, cultural evolution in Homo sapiens, and rational-cultural evolution in recent centuries; and, finally, a cultural evolutionary model of progressive and regressive moral change on which a key factor driving moral progress is social and democratic integration.

Keywords Evolution · Morality · Institutions · Norms · Progress

In *A Better Ape* (2022), we synthesize and build on multidisciplinary research on human evolution to develop a theory of the "moral mind" and its cultural variation across space and time. We also tell a story. The story begins with the common ancestors of humans and other living apes, continues through the origins of our genus and species, and ends with the transformation of modern humans through technological and social revolutions in agriculture, urbanization, industrialization, and globalization. In this precis, we'll highlight key episodes in this story and lay out our theory of the evolved, bio-cultural moral mind.

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In Sect. 1 we'll present the central idea that recurs in the book: that morality drives human evolution. In Sect. 2 we'll continue illustrating this idea by laying out our hypothesis about how humans became "behaviorally modern." In Sect. 3 we'll offer a detailed chronology of the book, unpack each ingredient of the moral mind, and sketch how the moral mind has been shaped by diverse social institutions. Finally, in Sect. 4 we'll introduce our cultural evolutionary theory of moral progress and moral regress.

How morality drives human evolution

Our genus originated roughly two million years ago with the birth of *Homo erectus*. Progenitor of all other human species on the planet, Erectus was perhaps the first to tame fire, develop a complex toolkit, and leave Africa for Eurasia. Roughly 700,000 years ago, Erectus gave rise to *Homo heidelbergensis*, which then produced Neanderthals and Denisovans in Eurasia, along with our own species Sapiens in Africa. The divisions between these taxa are not as sharp as previously thought. Sapiens interbred with Neanderthals, Denisovans, and other human species. Thus, the genomes of present-day non-Africans contain 2% Neanderthal DNA, while those of Melanesians contain 5% Denisovan DNA (Reich 2018).

Darwinian evolution led to many changes during the birth and development of the *Homo* genus, but arguably the most important was that humans became so much smarter than their forebears. Cognitive adaptations enabled humans to accumulate culture, create more complex tools and technology, and occupy diverse environments. For one thing, human brains became bigger: the brains of Erectus were more than twice as big as those of our last common ancestors with chimpanzees; the brains of Sapiens and Neanderthals were more than three times bigger. Brain size is just one determinant of human intelligence, however. Human brains also became denser, more folded, and more plastic. In addition, childhood and adolescence expanded. It took longer for humans to reach maturity because they had so much more culturally-transmitted information to download into their capacious brains from parents, relatives, and peers.

How did this happen? How did humans get so smart? A widely accepted theory is the "social intelligence hypothesis," inspired by the positive correlation between brain size and group size among living primate species (see, e.g., Dunbar 2016). In general, when an organism's environment becomes more complex, natural selection tends to favor greater cognitive sophistication in order to acquire knowledge about the environment. The environments of our ancestors became more and more complex as their groups expanded and the interdependent relationships between individuals became so intricate. Thus, a selective advantage was conferred upon individuals who were smart enough to better predict how others would behave, learn from them, avoid conflict, form shared plans, and manage reputations.

Yet, none of this would have been possible without the evolution of morality. For their large, rich social groups to remain stable, humans needed to evolve capacities to experience rich moral emotions toward each other, follow moral norms and hold others responsible to them, and reason together about the right and wrong thing to do in

novel situations they hadn't encountered before. In short, they had to evolve a moral mind, one flexible enough to cope with elaborate and fluid cultures. Thus, humans evolved greater intelligence because they acquired more complex social structure, but this social structure persisted because they acquired new moral capacities. The trajectory of human evolution, as we argue throughout *A Better Ape*, is the result of co-evolution between intelligence, sociality, and morality.

At this point, skeptics might respond: "Nice story, but why should we believe any of it?" Fair question. The evidence for our central hypothesis is laid out in the book, and while we can't rehearse all of it here, it's worth describing our methodology. Credible theories of human evolution can be constructed by integrating evidence from diverse sources: primatology, archaeology, anthropology, developmental psychology, and dozens of other scientific fields. Evolutionary theories are justified via inference to the best explanation. They triangulate. As philosophers, our methodology is to integrate the best such theories, and build upon them, to produce a single, coherent picture of the evolution of morality. We triangulate from the triangulators. Employing this methodology, we argue that morality has been instrumental to the advance of complex sociality and intelligence, not just at the birth of our genus and species but also during successive stages of human evolution.

The evolution of behaviorally modern humans

Let's return to the story of us. Long after Sapiens was born 300,000 years ago, recall, some of our ancestors interbred with other human species. But the friendships didn't last. Neanderthals, Denisovans, and our other cousins eventually went extinct. We killed them off through warfare, outcompeted them in other ways, and benefited from plain luck. After leaving Africa roughly 100,000 years ago, Sapiens colonized nearly every last bit of Eurasia, Australia, the Americas, and various islands and archipelagos. Strikingly, humans arrived in Australia at least 50,000 years ago. They spread from the northwestern edge of North America to the southernmost tip of South America within only two or three thousand years. Throughout all of this migration, our ancestors helped bring about the extinction of megafauna. Mastodons, wooly rhinos, giant armadillos, and the like were unaccustomed to predators armed with stone-tipped spears and other deadly weapons.

How did we do it? How did we leave Africa, colonize the world, and help bring about the demise of so many fantastic beasts, including our cousins? Part of the answer is documented in the archaeological record: just as humans began to leave Africa, they produced an explosion of more complex tools and technology, including projectile weapons, fire hearths, and miniature tools. To take just a single example, one reason Sapiens was able to outlast Neanderthals in the coldest parts of Eurasia was that we sewed. Both species covered themselves with animal pelts, but only Sapiens used sewing needles to make seamed clothing and thereby provide themselves with superior protection from the elements. The archaeological record of tools and artifacts is rich, but what it doesn't preserve – and yet points to unmistakably – is all the knowledge that Sapiens must have generated from their big, dense, and plastic brains. They needed to know how to make all their tools, how to use them, and how

to teach others the knowledge they possessed. Knowledge helped us become "behaviorally modern."

This explanation is illuminating but it also pushes the puzzle of behavioral modernity one step back: how did our ancestors generate all of this knowledge and technology? One popular idea is that around this period of time, humans luckily gained a genetically-evolved capacity for symbolic thought (Klein and Edgar 2002). The capacity for symbolic thought is supposed to explain the appearance of not just tools, knowledge, and communication but also our artistic achievements, such as the famous and unforgettable paintings preserved in French and Spanish caves. Yet, this popular idea faces insuperable problems. For example, some recent cave art in Spain is dated to a period of time when Sapiens had yet to arrive (Hoffmann et al. 2018). The art was a Neanderthal creation, evidently, so whatever capacities were responsible for it cannot be what separates Sapiens from our cousins. Furthermore, the archaeological markers of behavioral modernity appeared after some of our ancestors in northern Africa had separated from their Sapiens kin in sub-Saharan Africa. The popular idea entails, then, that sub-Saharan Africans lack the genetically-evolved capacity for symbolic thought. This fuels ideas about racial hierarchies and is demonstrably false. All living humans have the potential for behaviorally modern knowledge, technology, and art.

The capacity for symbolic thought was probably necessary for humans to become behaviorally modern. So were language, reasoning, cooking, and cooperative parenting, to name a few other advanced human traits. But all of these traits predated behavioral modernity and were shared with other human species. So, something else was also necessary for humans to become behaviorally modern. We hypothesize that what explains behavioral modernity is a novel iteration of the same dynamic that explains the evolution of our genus and species: co-evolution between intelligence, sociality, and morality.

There is no good reason to believe that individual members of our species were innately more intelligent than Neanderthals. However, we did have an advantage in numbers. Sapiens began to live in tribes – groups of groups that were geographically dispersed but shared a common ethno-linguistic identity. Living in tribes had many advantages: cooperation on a wider scale, a bigger social safety net, greater numbers in warfare and raiding, and wider trade of material resources and culture. Another crucial advantage was that tribes had what Henrich (2015) calls a bigger "collective brain." In tribes, there were more individuals to generate new knowledge, sift out and retain the most useful knowledge, and build on it. We have been standing on the shoulders of our predecessors for a lot longer than previously thought.

Collective brains offered greater intelligence and more knowledge. They arose roughly 100,000 years ago thanks to a new form of social structure. Humans developed social institutions – such as family and political institutions – with norms, practices, and rituals that facilitated cooperation on a wider scale. However, these institutions were stable only because humans had evolved a new, religious morality (see Henrich 2015). Humans began to see one another as brothers and sisters, descended from the same mythic ancestors, and favored by the same Gods. Religious morality expanded the moral circles of our ancestors so that they encompassed not just the local group but the entire tribe. This allowed tribal institutions to function

in ways that enabled collective brains to expand and produce more sophisticated knowledge and technology. Once again, then, morality helped drive human evolution – before by shaping our brains and bodies, and then by making us behaviorally modern. In the one case we formed moral minds in the context of large and complex groups, in the other these moral minds were shaped by religion in the context of tribal institutions.

Four stages of moral evolution

Let's step back and take a more synoptic view of the book. *A Better Ape* is divided in four parts, which correspond to what we identify as four stages of our evolutionary history. Stage 1 is the biological evolution of apes and early humans, roughly between 10 and 2 million years ago (Chaps. 1–2). Stage 2 is the gene-cultural co-evolution of Sapiens and other late humans between 2 million and 300,000 thousand years ago (Chaps. 3–5). Stage 3 is the purely cultural evolution of behaviorally modern humans through revolutions first in tribal institutions and then agriculture and urbanization, between 100,000 and a few thousand years ago (Chaps. 6–7). And stage 4 is the rational-cultural evolution of human societies in the past few hundred years, in the wake of more recent revolutions in industrialization, political organization, and globalization (Chaps. 8–10). In this section, we'll describe each stage in greater detail and highlight the concomitant evolution of morality.

So far, we've focused exclusively on human evolution. However, our book begins, as any Darwinian genealogy must, with the great apes in whose image we were made. Humans, chimpanzees, and bonobos share moral traits that evolved in their common ancestors. They have capacities for sympathy and loyalty ("binding emotions") that enable apes to protect their groups from predators and foes, raise offspring collaboratively, and sustain coalitional friendships. But humans cooperated more richly than other apes. They engaged in complex collaboration to manage hunting, foraging, childrearing, and warfare. To engage in these cooperative activities, humans evolved unique affective capacities to feel trust and respect ("collaborative emotions") and shame/guilt and resentment ("reactive emotions"). In order to cooperate effectively, humans also evolved what we call "deep empathy," a capacity to vicariously experience others' feelings and desires for their own sake (cf. Tomasello 2016). To be clear, we don't claim that other apes lack these moral capacities entirely. But we do argue, tentatively, that humans possess them to a significantly greater degree, and that human moral capacities are more flexible. Human morality is "adaptively plastic," designed to modulate an ancient tendency among apes (including humans) toward exclusion and subordination. With more plastic moral capacities, humans could attenuate intergroup violence and dominance hierarchies, when doing so helped resolve problems of interdependent living.

Our evolutionary history entered a second stage once the accumulation of cultural adaptations began to exert selection pressures upon our genes. The co-evolution of genes and culture shaped our bodies and minds. For example, our gastrointestinal systems were downsized as we externalized digestion via cooking and food processing. More pivotally, brains expanded in order to develop social learning capacities

that enabled the transmission of adaptive culture. Gene-culture co-evolution also transformed human morality so that we could cope with more complex and shifting social arrangements. Sapiens, and likely other human species, evolved culturally transmitted norms along with genetic capacities to learn and internalize whatever norms were present in our groups. Moral norms co-evolved with (and deepened) pre-existing moral emotions, creating five norm clusters that resonated with those emotions – harm norms (sympathy), kinship norms (loyalty), reciprocity norms (trust), equality norms (respect), and fairness norms (trust and respect). Sapiens also evolved a powerful adaptive tool for enhancing their evolved moral plasticity. To wit, a capacity for moral reasoning allowed us to extend old norms to new situations, resolve conflicts between norms, and build consensus necessary for large-scale and open-ended cooperation. Thus, by the time Sapiens walked the earth, the quasi-universal moral mind had been formed out of three main elements: moral emotions, moral norms, and moral reasoning.

The third stage of our history began once cultural evolution became powerful enough to make dramatic changes to human lifeways without needing much help from genetic evolution. To be sure, gene-culture evolution continued, for example, leading some humans to evolve the ability to digest lactose beyond childhood. But humans were able to colonize the world, domesticate the plants and animals around them, and live in dense, urban environments largely through novel cultural adaptations. In stage three, as well, culturally evolved social institutions shaped our moral minds to produce diverse "institutional moralities." As reviewed in the previous section, religious morality expanded moral circles to encompass the entire tribe, which was necessary to build social institutions that could sustain collective brains powerful enough to generate an explosion of knowledge and technology. In all, cultural evolution led to the development of five main types of institutions – family, political, religious, economic, and military institutions – that shaped moral norms and propelled the evolution of moral diversity across societies. For example, through their institutions, humans evolved new clusters of norms related to purity as well as authority. Moral circles expanded, but humans also developed institutional moralities that revived older forms of inequality, i.e., the domination of women and other subordinated social classes.

All of this past is crucial to understand the fourth and (so far) final stage of our evolutionary history. At last, over the last few hundred years or so, humans have gained some degree of control over the development of our societies, for better or worse. Focusing primarily but not exclusively on North American and British societies, we identify two different kinds of moral progress and regress. One involves inclusion: some groups are either included or excluded from another group's sphere of moral consideration. The other involves equality: unjust forms of domination and subordination either expand or contract. In some ways, human morality has become more inclusive (race, sexuality) and more egalitarian (gender). But in other ways, morality has become more exclusive (non-human animals) and more inegalitarian (socioeconomic class). In each case, morality evolves in concert with institutional social structure and knowledge. The payoff of the book is to use our account of the moral mind and its institutional scaffolding to develop informal evolutionary models of moral progress and moral regress. The philosophical ambition to imagine perfectly

just societies is beyond human cognitive abilities, but it is possible to theorize about how our societies can improve.

Moral progress and regress

Any study of the book's final main topic must confront a fundamental philosophical question: what is moral progress? To begin with, it's necessary to distinguish moral progress from improvement in average well-being, say, via longer lives and better health (see Buchanan and Powell 2018). Improvement in well-being is morally desirable, but it is not necessarily "moral progress" – not for example if it results solely from advances in medical science or public health. Moral progress, as such, occurs through improvements in morality. Many attempts have been made to define moral progress, in this sense, through universal principles. However, such principles invariably have counterintuitive applications. Our approach is less abstract: to look for specific episodes in human history that are clear examples of moral progress.

Over the last few hundred years, human societies have experienced various kinds of moral progress: abolition of African chattel slavery in the Americas; reduction in prejudice and oppression on the basis of race or ethnicity; extension of equal social and legal rights to women; less stigmatization and discrimination toward gay people; and the slow decline of global colonization, genocide, and apartheid. During the same period of time, however, human societies have also experienced moral regress: more frequent and intense wars; the rise of economic inequality; the torture and killing of animals on factory farms; environmental destruction. Even just considering these episodes of social change, it is virtually impossible to make "global" judgments about moral progress or regress. No one can weigh progress against regress and conclude with any confidence that the world is improving or deteriorating, on balance. The best we can do is to fix on "local" cases of progress or regress that are recent and well-researched, while being mindful that any morally significant change is contingent and can evolve in the opposite direction as circumstances change.

One striking example of moral progress is the abolition of chattel slavery in Britain in 1834 after roughly fifty years of intense public debate in churches, pubs, town-hall meetings, books, newspapers, and parliament. At first, abolitionists were a small minority, yet in the end they became a sizeable majority. Critical to this reversal was the change in how whites in Britain thought about Africans who had been forced into slave labor. Initially, Africans were thought of as less intelligent than whites and lacking in moral character. Eventually, however, most of those who had thought of slaves as less human in these respects, came to regard them as not relevantly different from whites, in light of eyewitness reports and the testimony of former slaves who spoke at public meetings. Eventually a better understanding of the similarities between whites and Blacks developed to the point at which slavery appeared morally unacceptable. If it is wrong to treat whites as property without moral standing or rights, many people realized, it is wrong to treat Africans this way, since there is no relevant moral difference between the two. To generate this knowledge through interactive moral reasoning, it was critical for there to be integration between white and Black people along with democratic institutions that facilitated open public debate (see also

Anderson 2010). In other times and places, ignorance and misinformation prevails over knowledge. Segregation and autocratic social structure obscures inconsistencies in the application of shared moral norms.

On the basis of case studies such as this, a general evolutionary model of moral progress and moral regress presents itself. Once again, moral evolution depends on the age-old dynamic between intelligence, sociality, and morality. On the one hand, inclusive and egalitarian moral progress is the result of co-evolution between knowledge about the world and the people who inhabit it, consistent application of shared moral norms and emotions, and integrative and democratic social structure. On the other hand, exclusive and inegalitarian moral regress is the result of co-evolution between false beliefs about the world and the people who inhabit it, inconsistent application of shared moral norms and emotions, and segregative and autocratic social structure. This model is obviously incomplete; progressive and regressive social change are multifactorial. Our focus is on mechanisms that implicate successes and failures of rationality. The reason for this focus is philosophical: these mechanisms can offer tools within non-ideal theory about how to improve human societies, replacing the more traditional philosophical search for utopias or ideally just societies.

To further illustrate this model, consider another important case of moral progress: the dramatic acceptance of gay people in North America and Europe within the past fifty years or so (see also Kumar et al. forthcoming). Gay people feel safer in each other's presence, and therefore large, gay communities developed in certain cities, such as San Francisco, Los Angeles, and New York. As more gay people felt safe enough to come out of the closet and lead rich, open lives, more were encouraged to do likewise. Many achieved positions of power and prestige. Unlike racial or ethnic identities, sexual orientation is often not immediately evident. It is, therefore, possible to discover that someone that you deeply admire, such as a friend, colleague, teacher, sports hero, inspirational political leader, or even family member, is gay. Sexual orientation is unlike race and ethnicity in another way since it is more-or-less randomly distributed across populations. So, straight people are likely to have friends, family, neighbors, and colleagues who are gay. Suppose you had thought that gay persons are morally unequal by nature or unqualified as such to have any moral standing. It would be difficult to reconcile either general attitude with the opposite moral view in the case at hand, especially since your positive attitude is based on clear personal evidence. In this straightforward way moral reasoning can augment moral progress. As gay people gained greater social acceptance, it became easier for them to live open and candid lives, which increased integration between gay and straight people, leading more straight people to make moral discoveries about people they knew or admired, which again enhanced social acceptance. In this and other dramatic episodes of moral progress, a positive feedback loop between knowledge, social structure, and moral reasoning unfolds.

A Better Ape lays out a theory of the evolved moral mind. The evolutionary mechanisms that explain how our moral mind arose in apes and humans, and underwent cultural variation among modern human tribes, also explain how humans have achieved gains and losses in inclusivity and equality over the last few centuries. Darwinian science about how humans have evolved can also offer insight into how to

achieve moral progress. No less important is how to resist moral regress, especially by meeting the looming threats of global inequality and climate injustice. Through a better understanding of ourselves, we might yet become a better ape, or at least avoid becoming a worse one.

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