The Moral Animal

Why We Are the Way We Are: The New Science of Evolutionary Psychology

By Robert Wright
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The Moral Animal is an eminently readable introduction to evolutionary psychology. The author skillfully blends humor, biography, and observations on Victorian culture to illustrate the emerging concepts of evolutionary psychology. Details of Charles Darwin's academic and family life are used to demonstrate particular points, making the book both entertaining and readily accessible to a lay reader. The book is a persuasive argument that evolutionary psychology can indeed explain its subtitle: "Why we are the way we are."

In a Nutshell

The theory of evolution was summarized by Darwin in 10 words: "Multiply, vary, let the strongest live and the weakest die." Subsequent work has focused less on "strongest" in terms of sharp teeth and individual survival, in favor of "inclusive fitness." Inclusive fitness refers to adaptations that are successful in propagating genes, directly or indirectly, into the next generation. Thus, a male spider may mate and then become the female's dinner, ending all further potential sexual opportunities for that male. This self-sacrifice is explicable if the nutritional advantage the male provides indirectly to his offspring through his sacrifice exceeds his likely additional reproductive success. The point of this is to caution the reader to watch the success of the genes, not necessarily the success (or demise) of the male spider. Genes may propagate not only through individual success, but also indirectly through the success of siblings and cousins.

Evolutionary psychology holds that not only did our physical organs develop through natural selection, but so did our mental organs. Biases in how our brains perceive, process, and react to the world around us either contributed to our survival and thrived, or died out. These biases affect social behavior and status, sexual selection, and gender relations. In short, evolution created both our bodies and our behavioral tendencies.

Modern humans emerged around 125,000 years ago, and lived a hunter-gatherer lifestyle until about 10,000 years ago when agriculture was invented. However, 10,000 years is not enough time for evolution to make significant changes. It is therefore a mistake to look at modern ways of life and ask how evolution has adapted to cell phones and stock options. Rather, one must consider behavioral traits in light of the ancestral environment. The ancestral environment was likely one of small groups of short-lived hunter-gatherers living in a polygynous society. One can then ask, "What benefit to inclusive fitness did behavior X convey in the ancestral environment?" A behavior that is a plausible candidate for increasing inclusive fitness can then

be tested in the modern world. Does it persist? If it is found across cultures, a strong argument can be made that the behavior has a genetic component. In other words, it is part of "human nature."

What makes evolutionary psychology so powerful is that it offers plausible explanations for a broad array of human behavior, including "midlife crises," altruism, honor and justice, conscience, lying, guilt and self-deception. It is not possible to fully explain these behaviors in this review; however, I will try to sketch some general concepts and roughly outline how evolutionary psychology addresses them.

As the author notes, evolution did not "design" anything. Evolution has no conscious intent. It cannot anticipate contraception, the invention of money, or global communications. It only preserves genes that previously increased inclusive fitness. Nevertheless, it is cumbersome to keep making this point, and much easier to read (and write!) about evolution if we allow a little bit of anthropomorphism—knowing full well that this is not technically correct. Similarly, some concepts in evolutionary psychology are not politically correct. While the author addresses these concerns, I will not.

Men and Women

To state the obvious, men and women are different. "Different" however, does not imply "better." Evolutionary psychology offers an explanation for how and why men and women differ in their behaviors. Of course, there is a wide variety of behavior within each gender; just because men on average behave in a certain way does not necessitate that a certain individual male will behave in a prescribed manner. Understanding a general "male" behavior is not a license to discriminate for or against an individual male, who may not express that particular trait.

The biological definition of female is the organism that contributes the larger sex cell. The larger sex cell is "more expensive" in terms of resources, and is therefore more scarce. In mammals, this reproductive scarcity is magnified by the fact that female biological resources nurture the fertilized egg until birth, and provide care and nutrition for some time thereafter. While women can produce 20 or so offspring in a lifetime, men can produce many, many more. Female reproductive availability is therefore scarce, and requires males to compete vigorously for it. Since the male reproductive contribution need not exceed a single ejaculation, one would expect males to be eager to engage in sex with as many females as possible. In short, evolution confirms the common observation that males are very eager for sex.

Females, meanwhile, have a somewhat different view of things. Females want the best genes, and are therefore happy to let males compete with each other to "prove" the fitness of their genes. However, with fewer potential offspring, it is relatively more important to females that each of those offspring survives to reproductive age. Females then seek Male Parental Investment (MPI). That is, males who stick around and help defend and nurture children greatly contribute to the survival of those children. It is readily apparent why genes promoting MPI would be successful, even for males. Females, meanwhile, face the uncertain task of determining beforehand which males will provide MPI. Obviously, the first question is, "Which

males are capable of providing MPI?" High status males are preferable in this regard to low status males (anthropologists have correlated status to sexual opportunities, even though birth control may now sever the link between status and offspring). In short, a materially successful husband can provide more support to children than a poor one. Females also use other behaviors as rough indicators of the likelihood of MPI. Things like gifts, public and private professions and commitments, and displays of affection—much of what we today call "courtship." Thus, the desirability of successful, high status males who demonstrate strong commitment.

Males then have at least two reproductive strategies: Inseminate wildly/low MPI, and limited reproduction/high MPI. The inseminate wildly strategy will work well for good looking, high status males, but probably poorly for plain, low-status males. Plain males will do better with the high MPI strategy. So, both strategies are likely to persist (and do). The genetic combination that will work best, however, is a set of genes that assesses the reproductive environment and the individual male's status, and "chooses" the appropriate reproductive strategy. This is an important idea, that a set of genes may be sophisticated enough to take cues from the environment and implement a strategy based on those cues. This is not to say that the genes or the individual goes through a thought process of, "I'm low status and plain, therefore I'll do high MPI." This "thinking" has already been done by evolution. Rather, the individual will simply find that his emotions and mental state are such that high MPI seems attractive. Evolution does not manipulate behavior through rational argument; instead, it uses emotions and desires that elicited a certain behavior in the ancestral environment.

Females also have several viable reproductive strategies. An optimal strategy would be to cheat: Obtain genes from a strong, good looking male while convincing a high MPI male to help support the offspring. Cuckolding gives the female's genes the best of both worlds—better genetic material plus help with the kids. However, for the low status male, it is the worst of all possible outcomes. He has chosen a limited reproduction strategy and is spending all his resources raising someone else's genes. Just as females have developed a detection strategy for high MPI, males have developed a detection strategy for cuckolding. Sociologists have long noted the "Madonna-whore dichotomy." That is, males regard females who withhold sex during courtship as worthy long-term mates, and discard females who are "easy." Female reticence for sex is used as a rough proxy for the likelihood of cuckolding. What makes this strategy particularly unfair is that males do everything in their power to tempt females into early sex, and then punish females for doing so! However unfair this seems to our rational minds, it makes perfect sense to our genetic interests.

How does this hold up in the real world? There is a great deal of study on male sexual eagerness and female sexual reticence, both in humans and other mammals. The Madonna-whore dichotomy is well established in sociology. Psychologists have also studied infidelity and found (not surprisingly) that males react very strongly to sexual infidelity, whereas females are more likely to forgive a one-time sexual adventure that does not jeopardize MPI. In this case, folk wisdom is supported by both scientific studies and evolutionary psychology theory.

Ever wonder why seemingly happily married men suffer a mid-life crisis, divorce a truly wonderful spouse only to re-marry women half their age? Think about the genetic logic. Genes that prompt males to be attracted to infertile females wouldn't have survived long. When a wife

reaches menopause she starts to show physical signs of infertility: Gray hair, wrinkles and sagging skin. Evolution manipulates the husband's desires, and also his perceptions. What were a wife's cute foibles become irritating annoyances. The spark that was there previously just isn't anymore. "We've grown apart" is the feeling. In the ancestral environment, these feelings would probably have been a cue to add a second wife and more offspring. In our current culture, the result is divorce and remarriage for the male (and likely impoverishment for the female). Or, as one Irish wit put it during a campaign for no-fault divorce: "Women voting for divorce is like turkeys voting for Christmas."

Polygamy: Who wins? Who loses?

It is fairly certain that the ancestral environment was polygynous (some men had multiple wives). Fully 980 of 1,154 societies studied by anthropologists were classified as polygamous—and most of the non-polygamous societies were modern. Of the 980 societies, the vast majority were polygynous, although there were a few allowing multiple mates for either gender. What is particularly interesting is to consider who wins and who loses from polygyny in a genetic sense.

In a monogamous society of 100 males and 100 females, each male would pair off with a female. However, the choice of mates is not random but based on status. Status for males may be culturally defined in terms of resources, good looks, hunting skills, social connections or many other traits. Status for females in the same society need not use the same standards but is likely to involve family status and cultural beauty norms, among other culturally determined things. The highest status male would tend to pair with highest status female, and so forth down the line.

Suppose now that the top 5 males each took 3 wives and the remainder of the population was monogamous. The top 15 females pair with five males; the remaining 85 females pair with 95 males, and 10 males are reproductively disenfranchised. All females (save the top female) have now moved up the status ranks of corresponding males. The 85 lowest females have each moved up 10 slots, giving them access to higher status genes than they otherwise could have obtained. The 5 top males have each expanded their reproductive potential three fold. The next 85 males have each been downgraded 10 female status slots. And the bottom 10 males are the biggest losers, having no spouse at all.

Understanding this reproductive opportunity structure explains some otherwise puzzling data. Since individual status is determined in part by family status, evolutionary logic would expect high status families to lavish resources on males because male offspring are likely to be high status themselves and be in a position to put more genes into the population through multiple wives (at least in the ancestral environment). And since nearly any fertile female (being scarce) can expect to find a mate, poor families should devote more resources to females (a low status male is, after all, a reproductive dead end). In the ancestral environment, the obvious way to bestow resources on a child is by deferring subsequent pregnancies, allowing available resources to focus on fewer children. This line of thought yields a verifiable hypothesis: Do high status families will wait longer after the birth of a male to have another child, and low status families the reverse? In fact, this turns out to be true. Even in modern times, high status families (as measured by income) wait longer after boys to have another child. Low status families wait

longer after girls. Also telling is the pattern of breast feeding. In North America, where wealth generally gives families options, high income women breast feed 60% of daughters, but 90% of sons. Low income women did the reverse, breast feeding daughters more than sons. As the author points out, natural selection shaped these women's behavior by manipulating their feelings, encouraging them to give more of themselves to certain of their offspring. It is unlikely that any of these women went through a conscious, rational process relating their income status to their breast feeding decision.

What of those bottom 10 males? Evolutionary logic would predict that they would take extraordinary risks to gain sexual opportunities. In the ancestral environment that could be done through violence—one way to ascend the status ladder is to kill your rivals. Warfare would also give low status males the opportunity to seize women from another village. Today, we find that murder is a crime rampant among poor, unmarried males 20-35 years old. Rape (excluding spousal abuse) has a similar demographic. Certainly, there is a clear evolutionary logic to a set of genes that relaxes inhibitions and heightens desires such that rape becomes acceptable to a low status male of otherwise dim prospects. While the idea that rape may have a genetic component is controversial, that does not mean the idea should remain unexplored. Policies designed to reduce rape have a better chance of working if the social and biological mechanisms that promote rape are fully known. The author goes to great pains to point out that just because there is an evolutionary explanation for a behavior such as rape does not mean that rape is moral or excusable.

Modern America is not a classically monogamous society. Given the easy and frequent access to divorce, America really practices serial monogamy. This has all the faults of polygyny and then some. High status males marry, monopolize a female's reproductive time, then divorce. Divorced females are less likely to remarry than divorced males, who frequently take younger wives, again monopolizing their reproductive years (remember the mid-life crisis?). The effect of serial monogamy is identical to polygyny: High status males monopolize more than their share of females' reproductive years. And unlike polygynous societies where first wives could generally count on continued support, modern divorced females suffer a significant drop in living standards. While the author does not argue against no-fault divorce, he does rightly insist that the debate over family stability must recognize that divorce has larger societal costs, which may include violent behavior by sexually disenfranchised males.

Love and Kin Selection

One pat objection to evolution is the existence of love and sacrifice for others. This objection confuses the success of the individual with the success of the genes. For example, parents share 50% of their genes with offspring, as do full siblings. (Actually, they share far more. However, they share 50% of the viable novel genes such as "Be good to your sister," which is what we're really interested in.) Genes that prompt a parent to defend offspring to the point of self-sacrifice may doom the parent, yet they proliferate through the protected offspring. Siblings, cousins, nieces and nephews likewise share significant amounts of genes. And sacrifice doesn't have to be a life or death event. Sharing food or other resources is also a sacrifice.

Evolutionary psychologists have suggested such willingness to sacrifice for kin—or "kin selection"—can be predicted by a simple formula: Sacrifice will occur when the cost of making the sacrifice to one person equals or exceeds the benefit to the other person times the degree of relatedness. People are more likely to give money to family members than to strangers. Ground squirrels are more likely to sound an alarm about an approaching predator (thus endangering themselves) when kin are nearby. The squawking ground squirrel may or may not survive the encounter; however, the genes that prompted the alarm behavior prosper through the squawker's kin. Similarly, famous self-sacrificers such as ants and bees appear much less selfless when you consider that the members of a colony often share 75% of their genes.

How then does evolution encourage such behavior in people? Not through rational thought, but through emotions. In particular, love. What better way to ensure that a parent cares for an offspring, or a brother protects a sister than to endow them with love? Right now, you are probably objecting (as I did) to the cynicism that love is just your gene's way of ensuring their survival. Yet what better way to ensure that love works than to make it appear self-evidently good to the individual, noble even? All of our emotions—noble and ignoble—exist because they directly or indirectly aided the survival of the genes that code for them.

Reciprocal Altruism

Reciprocal altruism among unrelated individuals is only a short step from kin selection. In the ancestral environment, humans likely lived in small groups. It would never have been entirely clear who was related to whom and by how much. But within a small group, one would expect a high degree of relatedness. Thus, a set of genes that encouraged major sacrifice for immediate family and some sacrifice for other group members might prosper. Such a set of genes would not optimize sacrifices, but it likely would increase the odds that sacrifices were beneficial. And that's all a set of genes must do to succeed: Increase the odds that those genes will proliferate.

Reciprocal altruism is better for both parties regardless of their degree of relatedness. For example, you may return from a successful hunt to find your neighbor has had a bad day. If you have plenty of meat, it costs you little to share. However, your neighbor otherwise has nothing to eat, and the benefit to him is large. If your neighbor can be induced to share when the situation is reversed, then both of you are much better off. Evolution recruited the emotions of friendship, reciprocity, generosity, and sympathy to encourage reciprocal altruism.

Immediately, however, one faces the problem of cheating. Your neighbor is better off if he takes and never gives. Evolution uses honor, a sense of justice, fairness, retribution, shame, conscience, and guilt to combat cheating. Game theory suggests that the best strategy for gaining the advantages of reciprocal altruism while avoiding cheaters is "tit for tat", or "Do unto others as they do unto you." The author explains how this "tit for tat" formula seems to underlie our senses of justice, fairness, and retribution.

In a small group, reputation counts. To be seen as a reliable reciprocator would bring obvious advantages. Note, however, that it is the appearance of being a reliable reciprocator more than the fact that counts. Hence honor, moral outrage and indignation are all emotions used to convince others of one's reliability while publicly condemning a cheater. Guilt, according to the

author, is far from being a reliable moral compass. Modern research suggests that guilt depends, in part, on the likelihood of discovery and not solely on the transgression. Shame, too, is felt most poignantly when misdeeds are made public. Both of these emotions have been co-opted by evolution to discourage behavior that made an individual appear to be an unreliable reciprocator.

Status

Status is a signaling mechanism for minimizing the costs of competition, whether that competition is for material resources or reproductive opportunities. Place a dozen randomly chosen chickens together and, after a several fights, they rapidly develop a "pecking order." Each "knows" whom it can beat, and whom it cannot. A status hierarchy is created. Serious fights are thereafter less common. Fighting is costly behavior: It requires energy and entails serious risk of injury. Status is a way to determine whom one can profitably challenge, and whom one cannot.

Within humans, status has become highly refined. It may be based on physical size, good looks (however culturally defined), money, alliances, or the ability to tell stories. What defines "status" is culturally derived. That there will be a status hierarchy seems to be part of human nature.

Deception and Self-Deception

The ability to deceive has clear advantages for achieving and maintaining status, and the appearance of reciprocal altruism. As can be seen in many species—harmless snakes that look like poisonous ones—evolution is not at all interested in "truth in advertising." Deception, being costly to those deceived, creates the need for deception detectors, which in turn would increase the benefit of better deception, and so on. In short, an evolutionary arms race.

One of the easiest ways to avoid detection is to truly believe your own deception. We remember and advertise our successes, attributing these to our skills. We forget and hide our failures, dismissing these as "bad luck" or someone else's fault. We are much more likely to remember (and exaggerate) debts due us than debts we owe. The overwhelming evidence for our knack for self-deception suggests we need to be more skeptical when thinking about who we really are.

Happiness

Happiness is one of natural selection's tools for motivating people to successful action. Unfortunately, happiness itself is not one of evolution's goals. In fact, evolution is perfectly willing for humans to be miserable if that increases inclusive fitness. Happiness seems to have evolved to reward success with a pleasant glow, which fades all too soon. Subsequent successes—preferably even larger successes—are needed to regain that glow. Because we have always been in a competitive world, the genes that prod us to strive more or less continuously have been most successful. The bad news is that we are not designed to be happy in the long term.

(The author devotes much more space to the concept of happiness than I have. I found his reasoning both persuasive and saddening. Upon further contemplation, I realized that the expectation to be happy all the time was unrealistic and itself a cause of poor decisions and unhappiness. Perversely, I am happier now that I realize I'm not supposed to be happy.)

Darwin & Freud

The author devotes an interesting chapter to briefly comparing evolutionary psychology and Freudian thought. While there are certainly differences, both approaches share a basic, underlying thought: The brain is an arena where people's animal natures battle their social realities.

One point on which evolutionary psychology and psychiatrists (and just about everyone else) differ is pain. As the author states, "To ponder natural selection is to be staggered by the amount of suffering and death that can be the price for a single, slight advance in organic design." Most of us believe that mental pain is a signal that something is wrong. From an evolutionary psychology perspective, mental pain is just natural selection's way of encouraging/discouraging behavior. There is nothing "abnormal" about pain. This is not to say that pain is "good" or desirable or that one shouldn't try to mitigate it. However, you are likely to develop different approaches to mitigating mental pain if you conceive of pain as an evolutionary response to something, rather than as a mechanism that has "gone wrong."

Determinism

Determinism stands in contrast to free will. It is the idea that your behavior is predestined because of your genes, or the physical mechanicality of the universe, or your culture, or God's omniscience. Determinism states that, regardless of how it may appear to you, your behavior is not really under your control. And this poses a paradox for morality: How can we praise or punish someone for behavior that is not under his or her control?

First, the author does not hold that genes determine all of your behavior, right down to the simplest decision. (Well, the fact that you can even make a decision is because natural selection endowed you with a complex brain…but we'll leave that aside.) Rather, our behavior is dependent upon our genes, our culture and our immediate environment. For the morality issue, it makes no difference how much is cultural and how much is genetic. Determinism is determinism.

What moral critics of genetic and/or cultural determinism fail to note is that evolution has within it a feedback loop which makes praise and punishment not only sensible, but necessary. That is, if we imprison a young rapist for 30 years, we've deprived him of his prime reproductive years. This fact impacts both the culture and the distribution of genes, making rape that much less likely in the future. The author effectively abandons the idea that punishment should be retribution or rehabilitative. Rather, punishment is justified because it changes the genes and culture of society for the better. What determinism doesn't tell us is which behaviors are "good" and praiseworthy, or "evil" and punishable.

Morality

The last three chapters of the book are devoted to morality. The author reasons that we all seek happiness; therefore, the appropriate moral code is Utilitarianism. Utilitarianism is the idea that we should each act so as to maximize everyone's total well-being. Implicit in this concept is the idea that we hold every other person's well-being as valuable as our own. If everyone acted in this fashion, then the amount of well-being in the world would be maximized and everyone would be better off. The author argues that seeking happiness is the only universal moral trait humans share and therefore should be adopted as the moral standard. In short, the author's argument for Utilitarianism is one of practicality.

The author makes an excellent case for how our moral sentiments developed; however, the leap from an explanation for morality to a moral code is rather weak. First, the author fails to note that we use the term "moral" in a variety of ways. One way is to indicate behavior that is generally socially acceptable at a given time and place. Another is an appeal to a "higher good." That is, if you believe in God and that God has a discernable purpose, then obviously actions that harmonize with God's will are Moral, and those that conflict are Immoral. Whether the appeal is to a God, "Natural Law," "Natural Rights," or some "self-evident truth," Morality with a capital "M" stresses some higher power or good.

Not infrequently, morality and Morality conflict. During American slavery, the Underground Railroad aided the transportation of stolen "property," at least according to some states. It was, by some local mores, "immoral." However, most of us today would consider participating in the Underground Railroad to have been a Moral act, even if we don't agree on exactly what higher good this furthers. Utilitarianism, if widely adopted, may increase our happiness. But that seems a rather pedestrian goal. It is not at all intuitively obvious that becoming a bit happier is a Moral pursuit, however otherwise desirable it might be.

And even if Utilitarianism is only small "m" morality, are we capable of it? Strictly speaking, people don't seek happiness in the abstract; they seek <u>their own</u> happiness. An individual's happiness is maximized by generally following Utilitarian principles, but cheating when the risk/reward ratio is attractive. Further, if the author's observations on evolutionary psychology are correct, then we are unavoidably biased in our own favor. In a world of scarce resources and abundant conflicts, whether we are capable of Utilitarianism can be reasonably questioned.

Lastly, it is not at all clear that all people seek happiness. Granted, most people prefer happiness to the alternative. But then, most people prefer vanilla ice cream, too. That does not seem to be enough to elevate vanilla ice cream to a "Moral Good." And there are quite a few people who voluntarily give up some or all of their capacity for happiness for some other goal. Vegetarians, religious practitioners, ascetics, and philosophers give up meat, dancing, material goods and social status for some higher truth. Indeed, religious martyrs do so rather convincingly. A Utilitarian might object that martyrs accept sacrifice for what they believe is a greater happiness. But if that's the case, then between martyrs and agnostics there is no agreement on what constitutes happiness and Utilitarianism becomes unworkable.

Conclusion

Quibbles about universal moral codes aside, this book is a remarkably entertaining tour of evolutionary psychology. The explanatory power of evolutionary psychology is clearly displayed by the author's diverse and often humorous examples. This book changed the way I view human behavior—both my own and others'. My only regret is that I was not able to read this book in my youth: It would have been an unfair advantage.