Mean Genes: From Sex to Money to Food: Taming Our Primal Instincts

J. Burnham and J. Phelan

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Combining Richard Dawkins with Dear Abby, Harvard economist Terry Burnham and UCLA biologist Jay Phelan are two of the first to publish what will no doubt be a flood of self-help books based on evolutionary psychology. In *Mean Genes: From Sex to Money to Food: Taming our Primal Instincts*, the authors argue that we are the unwitting henchmen of genes inherited from distant ancestors, genes that expect dinner to come only after a nasty row with a hyena, but that instead find themselves with a plate full of pork chops at the local diner. This mismatch between the dangerous and uncertain world of our ancestors, and the comparatively safe cities and suburbs enjoyed by inhabitants of the First World is, according to the authors, the source of the inner conflicts that trouble us all. That is, genes that were beneficial to reproduction in ancestral environments can nowadays have harmful effects on our physical and social well-being, engendering painful intrapsychic conflicts. In this short, easy-to-read book intended for a popular audience, Burnham and Phelan present an impressive number of findings from evolutionary psychological and sociobiological research on human and nonhuman behavior in an attempt to explain, from their mean genes perspective, why people frequently feel driven to do things they *know* are bad. The human data come from a variety of sources, but often focus on those non-Western peoples living in conditions similar to those our ancestors evolved in. At the end of each breezy and often entertaining chapter, Burnham and Phelan offer practical self-help advice for *overcoming* our mean genes and living up to our rational and moral senses, with the general advice being: anticipate what your genes are going to make you do, and then prevent them from making you do it. Interspersed throughout the book are amusing illustrations of the authors' experiences with overcoming their "mean genes."

The mean genes Burnham and Phelan describe include, for example, a lack of motivation to save money, an urge to eat to excess, a desire to take drugs, the seemingly superficial importance we attach to beauty, and extramarital attraction. In the section on beauty, the authors first play Dawkins, clearly explaining a variety of results that do not make sense except in light of evolutionary theory. For example, they review findings that symmetrical individuals are more attractive as mates (Bill Clinton is apparently about as symmetrical as a male model), and explain that this may be because symmetry indicates high quality, quality you want in a mate. Because a 0.7 waist-to-hip ratio is reliably correlated with higher fertility, men from many cultures prefer a 0.7 ratio in women, regardless of overall body mass (both Twiggy and Marilyn Monroe had 0.7 ratios). Men also prefer women with younger-looking features (e.g., large eyes) because, in women, youth is correlated with fertility.

In Dear Abby mode, the authors wisely recommend that we anticipate our often unconscious tendencies to prefer attractive people to unattractive people, and try to prevent ourselves from conferring unfair advantages based on beauty. They then blandly suggest that, while we can't do much to change our looks, looks alone do not determine attractiveness, so work on your personality if you're not good-looking. How about some real advice: get that facelift if you think appearing younger will help you get what

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you want in this unfair world; wear sunscreen every day; pay for braces so your kids get the benefits of looking more symmetrical; and if you're female, wear clothes that help you fake a 0.7 ratio.

There is a more fundamental problem with Burnham and Phelan's presentation, however, than the occasional piece of bland advice. Their conceptualization of the relationship between genes and behavior leaves out a key concept—psychological adaptations—an omission that undermines much of the book. Evolutionary psychologists look at adaptations, *not* genes, and there is an excellent reason for this. As critics of sociobiology never tire of pointing out, we understand very little about the relationship between genes and behavior. This truth would seem to cut evolutionary psychology off at the knees. The key insight, however, is that one infers adaptation not from genes but from *evidence of design*. We know without doubt that the uterus is an adaptation, not because we know which genes build uteruses (we don't), but because the features of the uterus show overwhelming evidence that they have been designed to solve the critical reproductive problem of containing the developing embryo for nine months, and then expelling it at birth.

Although they are sometimes identified by comparing traits across species, adaptations are most readily identified by a fit between the reproductive problems presented by the environments they evolved in, and the features they possess that are well designed to have solved those problems. Evolutionary psychologists study the fit between the features of psychological phenomena (which are evident in behavior and, for humans, in the thoughts/feelings/desires they report) and specific problems of reproduction in ancestral environments that those features would have solved. The better the fit, the more likely it is that a psychological phenomenon may be an adaptation produced by natural selection. In failing to discuss psychological adaptations, Burnham and Phelan cannot compellingly argue that the behaviors they discuss are a product of natural selection. They cannot provide the evidence of design that is central to identifying adaptations, and thus must resort to a genes-for-behavior shorthand that is unconvincing to almost everyone.

Focusing on genes instead of adaptations limits Burnham and Phelan in another way. The genes-for-behavior shorthand does not provide an adequate evolutionary framework for understanding environmentally contingent responses to the kinds of problems that are the focus of this book. If we all have genes for bad behaviors like overeating, we should all suffer from those genes. Yet most readers of self-help books, we suspect, want to know why they and not others must endure a particular hardship like obesity, drug addiction, depression, or high levels of jealousy. The concept of facultative psychological adaptations is helpful here; these are adaptations that monitor environmental inputs and activate only when they receive the right cue. Male sexual jealousy, for example, should only activate when a man fears losing his mate to another man, and this might be particularly likely when he has a markedly lower status than other men, and when his mate is attractive enough to obtain these men. This problem is not caused by a mismatch between ancestral and modern environments. Rather, social conditions like status varied in ancestral environments and vary today in the *same* ways. People with low status faced (and continue to face) problems that people with high status didn't (and don't). It is likely that we have sophisticated psychological adaptations that were designed to respond to such variable social conditions. Consequently, only some of us may suffer from severe jealousy, even though we all have the jealousy adaptation. *Mean Genes* just won't help us identify and understand these kinds of adaptations.

The *Mean Genes* strategy of anticipating intrapsychic conflicts caused by the mismatch between ancestral and current environments, and then preventing those conflicts, also cannot solve genuine conflicts among individuals. Take the following example: a husband wants additional sexual partners. His wife, who feels that she should be the sole recipient of his affection and resources, wants to prevent her husband from seeking additional sexual partners. Which member of the partnership should win this conflict? This is a battle between one person's adaptations and another's, and the outcome will ultimately rely on the level of intensity with which each person experiences his or her adaptation (e.g., he may only feel a slight desire to cheat, whereas she feels a strong urge to prevent him from doing so); the norms of their surrounding group (e.g., a society that condones polygyny vs. one that prohibits it); power relations (e.g., the wife cannot effectively deter his actions); and other specific circumstances (e.g., the wife may wish to seek alternative mates herself). Knowledge of the psychological adaptations underlying these kinds of conflicts can inform dialogue between conflicting parties, but only if we recognize that there is a genuine conflict of interests.

There are other limits worth mentioning. First, Burnham and Phelan are successful, young, North American male professionals. The problems they address in the book are problems posed by their current life circumstances: maintaining physical fitness, saving income, finding and maintaining long-term mates, seeking the thrills of past youth, etc. Their personal perspective gives the book character. Research on other key life endeavors, such as fathering, grandparenting, menopause, child nutrition and development, female competition, and psychological problems like depression and anxiety, however, is largely ignored. Second, many evolutionary psychologists would caution against offering advice based on what we currently know about psychological adaptations because much of our knowledge is fairly rudimentary. Finally, the superficial treatment of numerous studies prevents readers from being able to critically evaluate the research for themselves; pro-

fessional audiences will not be able to form their own interpretations of data presented, and they will not be able to examine evolutionary explanations presented (references must be obtained online at www.meangenes.org).

Burnham and Phelan have ventured onto fertile grounds for using an understanding of evolution to inform better living. *Mean Genes* explains, to a popular audience, how behaviors that were adaptive in ancestral environments are ill fitted to promoting individual well-being in many of today's environments. Though this approach is a welcome first attempt to use evolution-minded research in improving the qualities of our lives, there remains a need for a thorough and precise analysis of the relationship between the goals of self-help literature and evolutionary psychology.

Mother Nature: A History of Mothers, Infants, and Natural Selection

Sarah Blaffer Hrdy

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Sarah Blaffer Hrdy's *Mother Nature* is an evolutionary, comparative, cross-cultural, and historical analysis of mothers and their relationships with their infants and children. This is a tremendous book, integrating over twenty years of Hrdy's research on nonhuman and human female reproductive behavior. It reflects her intellectual as well as personal journey into motherhood, examining the joys, choices, and compromises that many women make in their lives regarding their children. In addition to relying on sociobiology and primatology, Hrdy demonstrates that her research supports feminists' arguments that women desire control over their reproductive lives and ongoing material and personal support in raising children.

Mother Nature is divided into three sections, which examine evolutionary theory and animal behavior; the development of mothers, motherhood, and alloparents; and, finally, the physical development and evolved behaviors of infants. Not only is this book well researched and written, it engages readers and shows how Hrdy's own experiences with motherhood and questions about maternal instincts have led her on this intellectual journey. While *Mother Nature* is accessible to a general audience, the notes and extensive bibliography of nearly 150 pages make this book an outstanding resource for scholars.

The first section of *Mother Nature* presents a history of evolutionary thinking on female behavior across species. Hrdy begins with Darwin and early evolutionists, showing how these earlier approaches neglected female reproductive behavior. Hrdy demonstrates how early evolutionists perceived female reproductive behavior as passive, and how evolutionary feminists have challenged and changed contemporary evolutionary science. These feminists have shown how females across species are active and strategic participants in reproductive decision-making. Hrdy presents her own research on langurs, other primates, and other species to show the wide range of behaviors that females use in reproduction, as well as the contingent nature of motherhood.

The second section of *Mother Nature* discusses what infants need from mothers, and how mothers have devised a variety of means to meet these needs. For example, Hrdy discusses the development of lactation in mammals and human females, and the corresponding physical, neurological, emotional, and social benefits infants receive from the milk, as well as the bonds formed with the mother. Not only does lactation enhance the survival chances of the infant and further its emotional development, lactation also enhances the long-term reproductive success of the mother. While mammals—especially human females—have evolved physical and emotional responses to pregnancy

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