

## DARWINISM, SOCIAL DARWINISM, AND THE “SUPREME FUNCTION” OF MOTHERS

by Sarah Blaffer Hrdy



[Editor’s Note: Sarah Hrdy is a sociobiologist whose work has focused on female reproductive strategies in both humans and non-human primates. Her graduate field work, detailed in *The Langurs of Abu: Female and Male Strategies in Reproduction*, was the first book on wild primates to devote equal attention to both sexes. Among these South Asian monkeys, females have adapted to the threat of infanticide by immigrant males by adopting polyandrous mating habits to confuse the paternity of their infants. She also documented how mothering is shared among groups of related females, a practice she termed “alloparenting.” Her subsequent book, *The Woman That Never Evolved*, focused more broadly on the role of female primate strategies in evolution. A 1984 edited volume (reprinted in 2008) with G. Hausfater, *Infanticide: Comparative and Evolutionary Perspectives*, explored the evolutionary advantages of the seemingly inexplicable practice of infanticide, as well as the social and ecological variables contributing to its use. In the book *Mother Nature: A History of Mothers, Infants and Natural Selection*, from which the excerpt below derives (pp. 12-25), she explores the tensions between what is advantageous for the evolutionary success of the mother’s genes and the survival of each particular infant. Along the way, Hrdy considers such topics as the evolutionary causes and consequences of “cooperative breeding” (a breeding system with alloparental care and provisioning of young), the reasons for menopause, the emotional and physiological consequences of lactation, why adoption is easier in humans than in many non-primate mammals, the role and optimal number of “fathers,” why female modesty evolved, why babies are cute, and the reasons why some cultures and socioeconomic groups prefer sons. Her newest book, *Mothers and Others: The Evolutionary Origins of Mutual Understanding*, due out in early 2009, explores the psychological implications of humankind’s long legacy of cooperative breeding. Dr. Hrdy is Professor Emerita of Anthropology at the University of California at Davis and is herself the mother of three grown children. A.S.B.]

According to Genesis, God created first heaven, then earth, then each variety of plant, every species of nonhuman animal, and, on the sixth day, man, and from one of his ribs, or perhaps his thigh, woman. In 1859, Charles Darwin proposed a revolutionary alternative to the biblical account. He titled his alternative genesis *On the Origin of Species*.

Darwin proposed that humans, along with every other kind of animal, evolved through a gradual, mindless, and unintentional process dubbed natural selection. Morally indifferent, natural selection culls and biases life chances with the unintended result that evolution (defined today as the change in gene frequencies over time) takes place. This mindless and “worse than morally indifferent” process geared to the maximization of short-sighted selfishness is what we mean by natural selection. She is the old lady with bad habits, the “Mother Nature” [the title of the book from which this excerpt comes].

Every environment, said Darwin, confronts organisms with challenges to their survival, whether the problem is cold or heat, tropical damp or drought, famine, predators, or limited space. For mothers, these problems become obstacles to keeping their infants alive. Individuals that are best adapted to their current environment survive and reproduce, passing on the attributes they possess to future generations. Losers in the struggle to survive die before they have a chance to breed, or they produce few offspring. Eventually, their line dies out.

The unfortunate and much misused expression “survival of the fittest” to paraphrase this phenomenon was introduced not by Darwin but by his prolific and widely read contemporary, the social philosopher Herbert Spencer. To Spencer, survival of the fittest meant “survival of the best and most deserving.”

Indeed, Spencer’s popularity was due to the simple take-home message delivered to his privileged audience in Victorian England and America: the advantages you enjoy are well deserved. For him, evolution meant progress. The flaw in Spencer’s reasoning was to mistakenly assume that environments stay the same, unchanging backgrounds



*Liberal and progressive, the artist Daumier was nevertheless ambivalent about working mothers, hence his lithograph "The mother is in the heat of writing. The child is in the bath water!" From "Liberated Women: The Lithographs by Honoré Daumier."*

against which "superior," optimally adapted individuals rise to the top and stay there in perpetuity. What Spencer left out were the fluctuating contingencies of an ever-changing world.

Only colored by that oversight could Spencer's social Darwinism provide a blanket endorsement of the status quo. By contrast, *Darwinism*—real Darwinian thought, correctly interpreted—ascribes no special place to anyone. No adaptation continues to be selected for outside the circumstances that happen to favor it.

When Darwin adopted Spencer's phrase "survival of the fittest," he meant the survival of those best suited to their current circumstances, not the survival of the best in any absolute sense. To Darwin, fitness meant the ability to reproduce offspring that would, themselves, mate and reproduce. But no matter. Spencer and his followers were gratified that so celebrated a naturalist and experimentalist as Darwin would cite his views, accept his catchy phrase,

and endorse heartfelt convictions about essential differences between males and females that derived from Spencer's theory of a physiological division of labor by sex.

The supreme function of women, Spencer believed, was childbearing, and toward that great eugenic end women should be beautiful so as to keep the species physically up to snuff. Because mammalian females are the ones that ovulate, gestate, bear young, and lactate (this much is irrefutable), Spencer assumed that the diversion of so much energy into reproduction had inevitably to lead to "an earlier arrest of individual evolution in women than in men"—a far more dubious extension (Spencer 1873: 32). Not only were men and women different, but Spencer's females were mired in maternity.

For Spencer, this physiological division of labor by sex meant that men produce, women merely reproduce. Costs of reproduction constrained mental development in women and imposed narrow bounds on how much any one female could vary from another in terms of intellect. Since variation between individuals is essential for natural selection to take place (which is true), Spencer reasoned (wrongly) that there was too little variation among females for proper selection to occur, precluding the evolution in women of higher "intellectual and emotional" faculties, which are the "latest products of human evolution."

Spencer was aware that a woman might occasionally possess a capacity for abstract reasoning. The only such female he personally knew, however, was Mary Ann Evans (the novelist George Eliot), whom he regarded as "the most admirable woman, mentally, I ever met." But Spencer regarded her gifts as a freak of nature, attributable to that trace of "masculinity" that characterized her powerful intellect (Spencer vol. 1: 395; Paxton 1991: 17-18).

The assumption that education would be wasted on women was, of course, a self-fulfilling prophecy. Denied higher education and opportunities to enter fields like science, how could women *not* fail to excel in them? Eliot herself was one of a minuscule number of women in Europe at that time educated (in her case, largely self-educated) in languages, literature, philosophy, and natural science. By regarding her as a masculinized exception, Spencer could reconcile his recognition of this woman's talents with his internalized evolutionary scale, on which women hovered in a fecund, biologically predestined limbo somewhere between Victorian gentlemen, on the one hand, and children and savages, on the other (Paxton 1991: 118; Russett 1989: 12ff.).

### Women as Breeding Machines

Spencer's validation of the status quo had far broader popular and political appeal than Darwin's more nihilistic perspective ever could. This is one reason why social Darwinism would become so influential. The second, related, reason was that Spencer's theory of the physiological division of labor by sex provided a scientific-sounding rationale for assuming male intellectual and social superiority. Spencer's "scientific" theories were an urgently needed antidote to the rising tide of feminist sentiment—especially in the United States—at a time when women were making real headway in their efforts to obtain the rights to vote and to own property in their own name.

Even before Freud declared that sex is destiny, Spencer and other evolutionists were constructing a complex theoretical edifice based on that assumption. They took for granted that being female forestalled women from evolving "the power of abstract reasoning and that most abstract of emotions, the sentiment of justice." Predestined to be mothers, women were born to be passive and noncompetitive, intuitive rather than logical. Misinterpretations of the evidence regarding women's intelligence were cleared up early in the twentieth century. More basic difficulties having to do with this overly narrow definition of female nature were incorporated into Darwinism proper and linger to the present day (Spencer 1873:32).

### "The One Animal in All Creation About Which Man Knows the Least"

Spencer was not the only early evolutionist to wear blinders where women were concerned. Guided by a theory of unusual scope and power, Charles Darwin exhibited an uncanny knack for winnowing out kernels of accurate observation from the hodgepodge of anecdotes being sent him by a vast array of hobbyists, pigeon breeders, and sea captains from around the world. Yet he could not shake the biases of a man who had, after all, grown up in a patriarchal world where the most important thing a woman ever did was choose, or be chosen by, a man of means. It did not occur to his Victorian imagination—as it would immediately have occurred to a !Kung forager—just how resourceful and strategic a woman would have to be to keep children alive and survive herself.

Compared with his observations on barnacles, orchids, coral reefs, and even the expression of emotion in his own children, Darwin's observation of women and

other female primates, in particular, were at best cursory. Thus in a passage few evolutionary biologists like to recall, and few feminists can bring themselves to forget, did the ever-careful Darwin deliver himself of the opinion that: "whether requiring deep thought, reason, or imagination, or merely the use of the senses and hands, [man will attain] a higher eminence . . . than can woman" (Darwin 1882: 587). Like Spencer, Darwin convinced himself that because females were especially equipped to nurture, males excelled at everything else. No wonder women turned away from biology.

For a handful of nineteenth-century women intellectuals, however, evolutionary theory was just too important to ignore. Instead of turning away, they stepped forward to tap Darwin and Spencer on the shoulder to express their support for this revolutionary view of human nature, and also to politely remind them that they had left out half the species.

In 1875, four years after Darwin's *The Descent of Man and Selection in Relation to Sex* appeared, there came a polite, almost diffident, rejoinder from the American feminist Antoinette Brown Blackwell. "When, therefore, Mr. Spencer argues that women are inferior to men because their development must be earlier arrested by reproduction," she wrote in *The Sexes Throughout Nature*, "and Mr. Darwin claims that males have evolved muscle and brains much superior to females, and entailed their pre-eminent qualities chiefly on their male descendants, these conclusions need not be accepted without question, even by their own school of evolutionists" (Blackwell 1875: 13-14).

Unquestionably, the most brilliantly subversive of these nineteenth-century distaff Darwinians was Clemence Royer, Darwin's petite, blue-eyed French translator. Self-educated like Eliot, Royer was the first woman in France to be elected to a scientific society. Darwin initially admired her as the "oddest and cleverest woman in France" but by the third edition of the *Origin* had lost patience with what he regarded as Royer's presumptuous manner. It particularly irritated Darwin that she criticized his (erroneous) ideas about "pangensis," Darwin's notion of how maternal and paternal attributes were blended in their offspring. Darwin instructed his publishers to find another translator (a man, who did not do nearly so good a job), essentially firing her. Ultimately, what most unnerved Royer's fellow evolutionists would have been her outspoken views on the "weakening of maternal instinct" in the human species and tactics

women use to subvert patriarchal control of their lives (Harvey 1997: 193-203). In France at this time the decline in birthrate, or “demographic transition,” that occurred in industrialized countries from the nineteenth century onward was well under way. Frenchmen were both puzzled and deeply concerned. There were plenty of married women of breeding age, many with more than sufficient resources for a family, some even wealthy, yet the censuses continued to register a declining population. Plenty of food, yet little in the way of “brats.”

Not in the least puzzled, Royer scoffed at her male colleagues’ lack of imagination: “Woman ... is the one animal in all creation about which man knows the least.... a foreign species.” When a male scientist describes women, she cautioned, he either extrapolates from his own experience or, worse, engages in an exercise in wishful thinking. Women were simply disguising from men their conscious desire to have few children. Large numbers of women, she believed, were deliberately curtailing conception—an idea that did not at all fit current evolutionary stereotypes about mothers.

Within the French scientific establishment of that time, Royer was doubly subversive—Darwinian in Lamarck’s homeland and a maverick female with iconoclastic ideas about motherhood. No other evolutionist in the world, much less a woman, was writing about women who learn to be “mistresses so they do not have to be mothers,” or wrote so enthusiastically about new techniques emanating from America for aborting unwanted pregnancies, taking advantage of physicians who have learned to “skillfully kill off the fruit without injuring the tree” (Harvey 1987: 161).

Royer’s own book on the origin of man (*Origine de l’homme et des sociétés*) appeared in 1870. But her most interesting ideas were set down in a later manuscript explaining why maternal instincts were weakened in the human species. Entitled “Sur la natalité” (On birth), it was already in proof for an 1875 edition of the bulletin of the *Société d’Anthropologie de Paris* when the journal’s editors suppressed its publication. In that suppressed manuscript Royer wrote:

Up until now, science, like law, has been exclusively made by men and has considered woman too often an absolutely passive being, without instincts, passions, or her own interests; a purely plastic material that without resistance can take whatever form one wishes to give it; a living creature with



Caricature of Clemence Royer from Vol. 4, No. 170 of “*Les Hommes d’aujourd’hui*,” 1881. A colleague at the *Société d’Anthropologie de Paris* referred to her as “almost a man of genius.” By permission of the Houghton Library, Harvard University (61-727F).

out personal conscience, without will, without inner resources to react against her instincts, her hereditary passions, or finally against the education that she receives and against the discipline to which she submits following law, customs, and public opinion.

Woman, however, is not made like this (Harvey 1997: 194).

Royer assumed females were active strategists with agendas of their own. A hundred years later (in 1981), unaware of Royer’s existence, I would publish a book, *The Woman That Never Evolved*, that made similar points. By then, the intellectual climate had changed. Much more empirical evidence about females was available, so a stronger case could be made. Evolutionary biology did eventually respond to these criticisms, yet in their lifetimes, the effect that these early Darwinian feminists—Eliot, Blackwell, Royer, and a few others—had on mainstream evolutionary theory can be summed up with one phrase: the road not taken. The toll was a costly one.

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More than a century would elapse before Darwinians began to incorporate the full range of selection pressures on females into evolutionary analyses and in doing so recognize the extent to which males and females had coevolved, each sex responding to stratagems and attributes of the other. It took far longer than it should have to correct old biases, for evolutionists to recognize just how much one mother could vary from another, and to take note of the importance of maternal effects and context-specific development.

An unfortunate by-product of the delay in correcting long-standing biases in evolutionary theory was that by the last quarter of the twentieth century, when evolutionary paradigms were widened to include both sexes, many women, especially feminists, had already long since abandoned evolutionary approaches as hopelessly biased. Biology itself came to be viewed by women as a field sown with mines, best avoided altogether.

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## TEACHING HUMAN EVOLUTION: WEBSITES

**Human Origins Program, Smithsonian Institution**  
<http://anthropology.si.edu/humanorigins/>

**National Science Teacher's Association**  
(position on the teaching of evolution)  
<http://www.nsta.org/about/positions/evolution.aspx>  
(resources for teaching evolution)  
<http://www.nsta.org/publications/evolution.aspx>

**PBS**  
(website on evolution)  
<http://www.pbs.org/wgbh/evolution/>  
(specifically for teachers, on teaching evolution)  
<http://www.pbs.org/wgbh/evolution/educators/course/session5/index.html>

**TalkOrigins** (exploring the creation/evolution controversy)  
<http://www.talkorigins.org/>

**UC Berkeley's Understanding Evolution**  
<http://evolution.berkeley.edu/>

**National Center for Science Education**  
<http://www.natcensci.org/>

**National Academies** (evolution resources – free downloads)  
<http://nationalacademies.org/evolution/>

**Museum of Science** (human evolution resources for educators and a list of links)  
<http://www.mos.org/evolution/resources/>

**Institute of Human Origins**  
[www.becominghuman.org](http://www.becominghuman.org)

**Evolution and the Nature of Science Institutes**  
(Indiana University)  
<http://www.indiana.edu/~ensiweb/>

**Exploratorium Case Study in Human Origins**  
<http://www.exploratorium.edu/evidence/>

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