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## The History of Evolution's Teaching of Women's Inferiority

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### **Abstract:**

*A review of the most prominent late nineteenth century evolutionist writings, focusing on Charles Darwin, reveals that a major plank of evolution theory was the belief of intellectual and physical inferiority of women. This belief resulted from a logical deduction of the natural selection world view: men were exposed to far greater selective pressures than women, especially in war and competition for mates, food, and clothing. Therefore, they evolved further. Conversely, women were protected from evolutionary selection by historical norms which dictated that men were to provide for and protect women and children. Natural selection would consequently operate far more actively on males, producing male superiority in virtually all skill areas. Although culture was also influential, beliefs have often been more important than fossil and other evidence in the*

*specifics of evolutionary theory. The implications of this history for Christianity are also discussed.*

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A key aspect of Darwinism is survival of the fittest, requiring group differences from which nature can select. The inferior groups were more likely to become extinct; the superior groups thrived and left more offspring.<sup>1</sup> The biological racism that resulted from naturalistic evolution theory has now been both well documented and widely publicized. Especially influential in the development of biological racism, and the tragedy that it brought civilization, was the theory of eugenics developed by Charles Darwin's cousin, Francis Galton.<sup>2</sup> Less widely known is that many evolutionists, including Darwin, taught that women were biologically and intellectually inferior to men. The intelligence gap that Darwinists believed existed between men and women was so significant that some evolutionists classified men and women into two distinct psychological species: males were *homo frontalis*, females *homo parietalis*.<sup>3</sup>

Male superiority was so critical for evolution that George states: "The male rivalry component of sexual selection was the key, Darwin believed, to the evolution of man: of all the causes which have led to the differences ... between the races of man, and to a certain extent between man and the lower animals, sexual selection has been the most efficient."<sup>4</sup>

Natural selection struggles exist between groups, but it is "even more intense among members of the same species, which have similar needs and rely upon the same territory to provide them with food and mates."<sup>5</sup> Evolution theorists once commonly taught that the intense struggle for mates within the same species was a major factor in producing male superiority. Further, Darwin's ideas as elucidated in his writing had a major impact on society and science. Richards concluded that Darwin's views of women's nature fed into his evolutionary theorizing, "thereby nourishing several generations of scientific sexism."<sup>6</sup> Morgan notes that Darwin motivated men to work out a set of reasons why women were "manifestly inferior and irreversibly subordinant" using biology, ethnology, and primatology.<sup>7</sup>

The reasons for this goal are complex, but one factor was the major influence of evolutionary suppositions, especially natural and sexual selection, on scientists and their world view. The extent of the effect can be gauged by the fact that this conclusion about the evolutionary inferiority of women greatly influenced theorists from Sigmund Freud to Havelock Ellis.<sup>8</sup> As eloquently argued by Durant, racism and sexism were central to evolution:

Darwin introduced his discussion of psychology in the Descent by reasserting his commitment to the principle of continuity: "My object ... is solely to show that there is no fundamental difference between man and the higher mammals in their mental faculties." ... Darwin rested his case upon a judicious blend of zoomorphic and anthropomorphic arguments. Savages, who were said to possess smaller brains and more prehensile limbs

than the higher races, and whose lives were said to be dominated more by instinct and less by reason ... were placed in an intermediate position between nature and man; and Darwin extended this placement by analogy to include not only children and congenital idiots but also women, some of whose powers of intuition, of rapid perception, and perhaps of imitation were "characteristic of the lower races, and therefore of a past and lower state of civilization."<sup>9</sup>

These beliefs were often reflected in Darwin's personal attitude toward women and non-Caucasian races. Darwin was once concerned that his son, Erasmus, might marry a young lady named Martineau and wrote:

... he shall be not much better than her "nigger." Imagine poor Erasmus a nigger to so philosophical and energetic a lady ... Martineau had just returned from a whirlwind tour of America, and was full of married women's property rights ... Perfect equality of rights is part of her doctrine...We must pray for our poor "nigger." ... Martineau didn't become a Darwin.<sup>10</sup>

Among the more telling indications of Darwin's attitudes toward women are the statements he penned as a young man, which listed what he saw as the advantages of marrying. These include:

children - (if it pleased God) - constant companion, (friend in old age) who will feel interested in one, *object to be beloved and played with - better than a dog anyhow* -- Home, and someone to take care of house -- Charms of music and female chit-chat. These things good for one's health (emphasis mine).<sup>11</sup>

Darwin then listed his negative concerns which included losing freedom to travel, being "forced to visit relatives, and to bend in every trifle," and

loss of time - cannot read in the evenings - fatness and idleness - anxiety and responsibility - less money for books, etc., - if many children, forced to gain one's bread ... perhaps my wife won't like London; then the sentence is banishment and degradation with indolent idle fool.<sup>12</sup>

Other conflicts that Darwin perceived marriage would cause included "how should I manage all my business if obligated to go everyday walking with my wife - Ehau! " and that as a married man he would be a "poor slave ... worse than a Negro" but then reminisces that, "one cannot live the solitary life, with groggy old age, friendless and cold and childless staring in one's face ... " Darwin concluded his discussion on the philosophical note "there is many a happy slave" and shortly thereafter in 1839 married his cousin, Emma Wedgewood.<sup>13</sup> To Brent, these words show that Darwin had a low view of women: "It would be hard to conceive of a more self-indulgent, almost contemptuous, view of the subservience of women to men."<sup>14</sup> Richards analysis of Darwin's thoughts is as follows:

From the onset he [Darwin] embarked on the married state with clearly defined opinions on woman's intellectual inferiority and her subservient status. A wife did not aspire to be her husband's intellectual companion, but rather to amuse his leisure hours ... and look after his person and his house, freeing and refreshing him for more important things. These views are encapsulated in the notes the then young and ambitious naturalist jotted not long before he found his "nice soft wife on a sofa". ... (although throughout their life together it was Charles who monopolized the sofa, not Emma).<sup>15</sup>

The major intellectual justification Darwin offered for his belief in women's inferiority, Kevles notes, is found in *The Descent of Man*. Here Darwin concluded the "young of both sexes resembled the adult female in most species" and from this and other evidence "Darwin reasoned that males are more evolutionarily advanced than females."<sup>16</sup> This view of women and evolution rapidly spread to scientists contemporary with Darwin. Anthropologist Allan concluded that "woman preserves the infantile type ... physically, mentally and morally, woman is a kind of adult child ... in the domain of pure intellect it is doubtful if women have contributed one profound original idea of the slightest permanent value to the world."<sup>17</sup>

Carl Vogt, professor of natural history at the University of Geneva, accepted many of "the conclusions of England's great modern naturalist, Charles Darwin," arguing "the child, the female, and the senile white" all had the intellectual features and personality of the "grown up Negro"<sup>18</sup> and that the female is similar in intellect and personality to both infants and the "lower" races.<sup>19</sup> Vogt concluded that human females are closer to the lower animals than males; and "hence we should discover a greater [apelike] resemblance if we were to take a female as our standard."<sup>20</sup> Because her evolution stopped earlier, a woman was "a stunted man."<sup>21</sup> Vogt even concluded that the gap between males and females increases with civilization's progress, and is greatest in the advanced societies of Europe.<sup>22</sup> Darwin was "impressed by Vogt's work and proud to number him among his advocates."<sup>23</sup> Other followers of Darwin who accepted this reasoning, especially the power of sexual selection, included

... George John Romanes, a younger evolutionist and physiologist. Shortly before his death, Darwin handed over to Romanes a great deal of data he had not had time to sort out ... according to Romanes, as the sexes moved toward more divergent roles ... females became increasingly less cerebral and more emotional. Romanes ... shared Darwin's view that females were less highly evolved than males - ideas which he articulated in several books and many articles that influenced a generation of biologists ... At the University of Pennsylvania, the influential American paleontologist Edward Drinker Cope wrote that male animals play a more active part in the struggle for existence ... both Romanes and Cope ... included human beings in their generalizations (emphasis mine).<sup>24</sup>

Darwin taught that the differences between men and women were due largely to sexual selection. To pass his genes on, a male must prove himself physically and intellectually superior to other men in the competition for females, whereas a woman must only be superior in sexual attraction. Darwin concluded that "sexual selection depended on two different intraspecific activities: the male struggle with males for possession of females;

and female choice of mate.<sup>25</sup> In Darwin's words, evolution depends on "a struggle of individuals of one sex, generally males, for the possession of the other sex ..."<sup>26</sup>

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In support of this conclusion, Darwin used the example of Australian "savage" women, who "are the constant cause of war both between members of the same tribe and distinct tribes, producing sexual selection" due to sexual competition.<sup>27</sup> He also cites the North American Indian custom which requires the husband to wrestle with male competitors to retain his wife; "the strongest party always carries off the prize."<sup>28</sup> The result is, Darwin concluded, "a weak man ... is seldom permitted to keep a wife that a stronger man thinks worth his notice. This custom prevails throughout all of the tribes" in North America. It is not clear how common these practices were then, but they were not common in Europe and Asia.<sup>29</sup>

Darwin used several other examples to illustrate the evolutionary forces which he believed produced men of superior physical and intellectual strength, and docile, sexually coy women. Since humans evolved from animals and "no one disputes that the bull differs in disposition from the cow, the wild boar from the sow, the stallion from the mare, and, as is well known through the keepers of menageries, the males of the larger apes from the females," Darwin argued that similar differences existed among humans.<sup>30</sup> Consequently, he concluded that men are, "more courageous, pugnacious and energetic than woman, and have more inventive genius."<sup>31</sup>

A major problem with applying observations from the animal kingdom to humans was that scientists were "now prepared to debate the most complex problems of economic reforms not in terms of the will of God, but in terms of the sexual behavioral patterns of the cichlid fish."<sup>32</sup> Nonetheless, as a result of Darwinism, most evolutionists concluded that women differed considerably from men in mental disposition and intelligence, as did females and males of other species. Further, many female traits "are characteristic of the lower races, and therefore of a past and lower state of civilization."<sup>33</sup> In summary, Darwin concluded that

the chief distinction in the intellectual powers of the two sexes is shown by man's attaining to a higher eminence, in whatever he takes up, than can women - whether requiring deep thought, reason, or imagination, or merely the use of the senses and hands. If two lists were made of the most eminent men and women in poetry, painting, sculpture, music, ... history, science, and hilosophy ... the two fists would not bear comparison. We may also infer, from the law of the deviation from averages, so well illustrated by Mr. Galton, in his work on "Hereditary Genius" that if men are capable of a decided pre-eminence over women in many subjects, the average of mental power in man must be above that of women.<sup>34</sup>

Throughout his life, Darwin held these views about "male supremacy," which he believed were critical in evolution.<sup>35</sup> Obviously, Darwin almost totally ignored the major

influences of culture, the environment, constraining social roles, and the relatively few occupational and intellectual opportunities that existed in his day and historically for both sexes.<sup>36</sup> He believed, as do many sociobiologists today, that biology rather than the environment was the primary source of behavior, morals, and all mental qualities.<sup>37</sup> Shortly before his death, Darwin said he agreed with Galton "in believing that education and environment produce only small effects on the mind of any one, and that most of our qualities are innate."<sup>38</sup>

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Further, Darwin attributed most female traits to male sexual selection, but only a few male traits to female selection. He felt that females were not fussy about their mate's physical appearances. Therefore, males were not only "more powerful in body and mind than women" but had even "gained the power of selection" - evolution was in the males' hands, and females were largely passive.<sup>40</sup> Women, consequently, were less evolved and more primitive; this is why instinct and emotions dominated women, a fact which was her "greatest weakness."<sup>41</sup> There are major problems with a sexual selection hypothesis. Marriages in many societies are arranged by relatives for pragmatic considerations, such as to become part of a certain family, to obtain a dowry, or simply so the parents no longer must support an offspring. Darwin also argued that ... the intellectual powers in man were normally developed before the reproductive age and their heritable component would not be affected by the environment. Intellectual superiority of the human male was innate but how had it come about? By sexual selection, said Darwin, not by female choice.

Man's beard might be the result of female choice ... but, considering the condition of women in barbarous tribes - where men kept women "in a far more abject state of bondage than does the male of any animal" - it was probably the male that chose. Different standards of beauty selected by the male might, thus, account for some of the differentiation of tribes.<sup>42</sup>

Darwin concluded that some traits were due to sexual selection. These included hairlessness on the human torso and limbs, and the numerous other secondary sexual characteristics which differentiate humans from all other animals. What remains unanswered is why males or females would select certain traits in a mate when they had been successfully mating without them for eons and when most primates did not prefer these traits. Unfortunately, in this case, "Darwin, as usual, looked for a single cause to explain all of the facts."<sup>43</sup> If sexual selection caused the development of a male beard and its lack on females, why do so many women prefer shaven males? Obviously, culture is critical in what is considered sexually attractive. These standards change greatly, precluding the long term sexual selection needed to develop them biologically.<sup>44</sup>

Because males allegedly varied to a greater degree than females in all traits, they were felt to be superior.<sup>45</sup> This was important because variations from the norm was already accepted as the mechanism of evolutionary progress (survival and transmission of adaptive variations) and because it seems that the male was the more variable sex, it soon was universally concluded that the male is the progressive element in the species ... Once deviation from the norm became legitimized by evolutionary theory, the hypothesis of greater male variability became a convenient explanation for a number of observed sex differences, among them the greater frequency with which men achieve "eminence."<sup>46</sup>

Proponents who supported the inferiority of women position pointed out that a higher percent of both the mentally deficient and mentally gifted are male. Its opponents argued that since selection operates to a greater degree on men, the weaker males would be more rigorously eliminated. Thus, women would manifest a higher degree of variation.

Further, the weaker females would be preserved by norms that protected them. Hollingworth's work was especially important in discrediting the variability hypothesis. She found that feeble-minded women were better able to survive outside an institutional setting partly as a function of the female role; thus, institutional surveys would find fewer females. Further, sex-linked diseases as well as social factors influenced the higher number of males judged feeble-minded.<sup>47</sup> These debates revealed not only the weak empirical evidence for the female inferiority theory, but also many problems with both natural and sexual selection theories.

Few women were defined as eminent because their social role often confined them to housekeeping and child rearing. Also, constraints placed on their education and employment by both law and custom rendered comparisons between males and females of little interpretive value relative to abilities. Consequently, it is naive to attempt to extrapolate measures of intelligence, feeble-mindedness, eminence, and occupational success to biology, let alone evolutionary history. This argument, which once seemed well supported (and consequently was accepted by many theorists) was later viewed as having little validity.<sup>48</sup>

## **The Influence of Darwin on Society**

The theory of the origin of behavior via natural and sexual selection was to have major consequences on society almost as soon as Darwin completed his first major work on evolution. In Shields' words "the leitmotif of evolutionary theory as it came to be applied to the social sciences was the evolutionary supremacy of the Caucasian male."<sup>49</sup> Leading evolutionist Joseph Le Conte concluded that "the fundamental differences between male and female resulting from organic evolution must also apply to distinct societal roles for each sex."<sup>50</sup> Consequently, Le Conte concluded that "women were incapable of dealing rationally with political and other problems which required emotional detachment and clear logic" and therefore he opposed women's suffrage.<sup>51</sup> Key to the innate inferiority belief were biological determinism and the primacy of nature over nurture. After reviewing the once widely-accepted tabula rasa theory which teaches that the

environment is responsible for personality, Fisher discussed the radical change in society caused by Darwinism:

... the year in which Darwin finished the first unpublished version of his theory of natural selection [1842], Herbert Spencer began to publish essays on human nature. Spencer was a British political philosopher and social scientist who believed that human social order was the result of evolution. The mechanism by which social order arose was "survival of the fittest" a term he, not Darwin, introduced. In 1850, Spencer wrote *Social Statics*, a treatise in which he ... opposed welfare systems, compulsory sanitation, free public schools, mandatory vaccinations, and any form of "poor law." Why?

Because social order had evolved by survival of the fittest. The rich were rich because they were more fit; certain nations dominated others because these people were naturally superior; certain racial types subjugated others because they were smarter. Evolution, another word he popularized, had produced superior classes, nations, and races.<sup>52</sup>

Fisher added that the early evolutionist's teaching included not only the idea of superior races, but also the idea that a superior sex - the male sex - was to dominate and control females by virtue of evolution. Because males had to protect both themselves and their females, they were thought superior. In the words of nineteenth century evolutionist Topinard, males have "all of the responsibility and the cares of tomorrow, [and are] ... constantly active in combating the environment and human rivals, [and thus need] ... more brains than the woman who he must protect and nourish ... the sedentary women, lacking any interior occupations, whose role is to raise children, love, and be passive."<sup>53</sup>

Males were also subjected to many selection pressures that women were not. They were required to hunt. Hunting can be a dangerous activity: one could become lost or injured, not to mention the hunter could sometimes become the hunted and be injured or killed. The stronger and quicker males were more apt to survive a hunt and bring back food. Therefore, natural selection would impact them to a greater degree than females. In short, male superiority was due to the "inheritance from his half-human male ancestors ... the long ages of man's savagery, by the success of the strongest and boldest men, both in the general struggle for life and in their contest for wives; a success which would have ensured their leaving a more numerous progeny than their less favored brethren."<sup>54</sup> Women, on the other hand, have historically not hunted but instead have taken care of domestic, often menial repetitive tasks, and were thus far less affected by selection pressures. Since long-term selection prunes out the weak, all factors which help to save the weak allow them to pass their inferior genes to their offspring, consequently, working against evolution.

The long tradition has been for males to protect women: only men went to battle, and the norms of war forbid deliberately killing women. Women were sometimes killed, kidnapped, or raped, but they were not often formally involved in war as were the male combat troops. Dyer concluded combat is exclusively a male occupation because

men were more suited to it by their greater physical strength and their freedom from the burden of childbearing ... almost every living male for thousands of generations has imbibed some of the warrior mystique ... and men were specialized in the hunting and warrior functions for the same physical reasons long before civilized war was invented.<sup>55</sup>

Williams discusses the problem of male inferiority, especially as it relates to the greater mortality rates in males compared to females, and concluded that

at every moment in ... life the masculine sex is playing for higher stakes. Its possible winnings, either in immediate reproduction or in an ultimate empire of wives and kin, are greater. So are the possibilities for immediate bankruptcy (death) or permanent insolvency from an involuntary but unavoidable celibacy ... a male's developmental program must gamble against odds in an effort to obtain the upper tail of the fitness distribution. A female's need merely canalizes against malfunctions. Female mortality will be found to exceed male, not in species with female heterogamety, but in those with female masculinity.<sup>56</sup>

Many evolutionists concluded that skill plays a far greater role in hunting and fighting than in domestic work carried out by women. Consequently, "because women's activities typically require less skill than men's activities ... [and] available evidence suggests that men vary much more in hunting abilities than women do in gathering abilities, hence, as with violence, *selection acts far more intensely among males than among females*" (emphasis mine).<sup>57</sup> In Williams' words, "at every moment in its game of life the masculine sex is playing for higher stakes."<sup>58</sup> The following statement by George demonstrates just how critical women's inferiority doctrine was for evolution:

The chief difference between men and women, however, lay in their intellectual power, "man attaining to a higher eminence, in whatever he takes up, than can woman - whether requiring deep thought, reason or imagination or merely the uses of the senses and hands." Those striking differences, Darwin argued, could not have been the result of use and disuse, of the inheritance of acquired characters; for hard work and the development of muscles was not the prerogative of man: "in barbarian societies women work as hard or harder." ... Intellectual superiority of the human male was innate but how had it come about? By sexual selection, said Darwin, not by female choice.<sup>59</sup>

Sexual selection was at the core of evolution, and female inferiority was its major proof and its chief witness. Males, Darwin concluded, were like animal breeders, shaping women to their liking just as animal breeders do.<sup>60</sup> Men were the hunting specialists and women "specialized in the 'gathering' part of the primitive economy."<sup>61</sup> War pruned the weaker men, and only the strong survived to come home and reproduce.

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selection taken for granted by most scientists in the late 1800s. Gould claims that there were then "few egalitarian scientists" - almost all believed that Blacks, women, and other groups were intellectually inferior and closer to the lower animals.<sup>62</sup> Nor were these scientists simply repeating prejudices without extensive work and thought about evolution theory. They attempted to prove scientifically that women were inferior by completing reams of empirical research.

Even today, some evolutionary scientists still accept many of these conclusions.<sup>63</sup> Gibbons notes that many evolutionists conclude that sexual differences in thinking "have roots in strong evolutionary pressures on the sexes during prehistory when the brain was expanding rapidly."<sup>64</sup> The conclusion that women are evolutionarily inferior to men was a core aspect of, and unassailable evidence for, evolutionary theory, especially of Darwin's major contributions: natural and sexual selection. The teaching also had clear social policy implications:

For Darwin, the intellectual differences between the sexes, like their physical differences, were entirely predictable on the basis of a consideration of the long-continued action of natural and sexual selection ... Male intelligence would have been consistently sharpened through the struggle for possession of the females (that is, sexual selection) and through hunting and other male activities such as the defense of the females and young (that is, natural selection). According to Darwin's notions ... "man has ultimately become superior to woman."

On this basis, he argued in *The Descent* that the higher education of women, which was being furiously contested in Victorian England, could have no long-term impact on this evolutionary trend to ever-increasing male intelligence. ... male intelligence would be constantly enhanced by the severe competitive struggle males necessarily underwent in order to maintain themselves and their families, and "this will tend to keep up or even increase their mental powers, and, as a consequence, the present inequality between the sexes."<sup>65</sup>

Darwin was not simply giving biological reasons to support a view that was long believed in history. Tavris concluded that it was widely believed among scientists for centuries "that most of men's and women's body parts were perfectly interchangeable, and that the parts that were not - those interesting reproductive organs - were nevertheless analogous: women's organs were the same as men's, 'turned outside in.'"<sup>66</sup> With the coming of Darwin, a drastic change took place:

In the nineteenth century, however, scientists in all fields began to attack this premise, and to emphasize instead the chasm between masculine and feminine natures, physical and mental. They concluded that the differences between male and female bodies were correspondingly vast, because female development had been arrested at a lower stage of evolution. Women, they said, could be placed on the evolutionary ladder along with children, apes, and "primitive" people. Even illustrations of female skeletons reflected this belief in female inferiority. Female skeletons were drawn with tiny skulls and ample

pelvises, to emphasize the idea that women were intellectually weak and suited mainly for reproductive functions.<sup>67</sup>

To show that females were as a whole inferior to males, scientists set out to "prove" that the females' brain capacity was smaller. They first tried to demonstrate smaller female cranial capacity by skull measurements, which could easily be done; and then prove that brain capacity was causally related to intelligence, a far more difficult task.<sup>68</sup> The justification for this approach to proving inferiority was explained by Darwin:

As the various mental faculties gradually developed themselves the brain would almost certainly become larger. ... the large proportion which the size of man's brain bears to his body, compared to the same proportion in the gorilla or orang, is closely connected with his higher mental powers ... that there exists in man some close relation between the size of the brain and the development of the intellectual faculties is supported by the comparison of the skulls of savage and civilized races, of ancient and modern people, and by the analogy of the whole vertebrate series.<sup>69</sup>

One of the most eminent of the numerous early researchers that used craniology to prove the intellectual inferiority of women was Paul Broca (1824-1880), a professor of surgery at the Paris faculty of medicine and 'one of Europe's most prestigious anthropologists.' He was a leader in the development of physical anthropology as a science, and in 1859 founded the prestigious Anthropological Society.<sup>70</sup> A major preoccupation of this society was measuring various human traits including skulls to "delineate human groups and assess their relative worth."<sup>71</sup>

Broca concluded that in general the brain is larger in mature adults than in the elderly, in men and in women, in eminent men than in men of mediocre talent, in superior races than in inferior races ... other things equal, there is a remarkable relationship between the development of intelligence and the volume of the brain.<sup>72</sup>

Broca's research was not superficial, but thorough and extensive. As Gould states, "one cannot read Broca without gaining enormous respect for his care in generating data."<sup>73</sup> Broca was especially interested in the intellectual and cranial comparisons of women with men: "of all his comparisons between groups, Broca collected the greatest amount of information on the brains of women vs. men ..."<sup>74</sup> He concluded that "the relatively small size of the female brain depends in part upon her ... intellectual inferiority."<sup>75</sup> Broca also concluded that the disparity between men and women's brains was, even in his day, becoming greater. The increasing difference was "a result of differing evolutionary pressures upon dominant men and passive women."<sup>76</sup>

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In an extensive study of Broca's work, Gould concluded that his conclusions were 'the shared assumptions of most successful white males during his time - themselves on top ... and women, Blacks, and poor people below.'<sup>77</sup> How did Broca arrive at these

conclusions? Gould answers that "his facts were reliable ... but they were gathered selectively and then manipulated unconsciously in the service of prior conclusions,"<sup>78</sup> namely that, as evolution predicted ... women were intellectually and other-wise demonstratively inferior to men. Broca's own research and the changing social climate, though, later caused him to modify his views, concluding that culture was more important than he had first assumed.<sup>79</sup>

## The Views of Other Darwinists

Other evolutionists were convinced that many differences between the brains of males and females included the frontal lobes. In females, they were less developed; the neurons were different; and the "cerebral fibre" was softer, longer, and more slender. The males' frontal lobes were "in every way" more extensively developed than females, a sex difference that even existed in the unborn fetus.<sup>80</sup> Other differences that indicated males were superior included the complexity and the conformation of the gyri and the sulci, differences in the corpus callosum, and the fetus cortex development rate.<sup>81</sup>

These views were expounded by many of the most prominent scientists of Darwin's generation. Gustave Le Bon (1841-1931), a founder of the social psychology scientific discipline, and a pioneer in the collective behavior field whose classic study of mob behavior, *The Crowd* (1895), is familiar to every social science student, wrote:

in the most intelligent races ... are a large number of women whose brains are closer in size to those of gorillas than to the most developed male brains. This inferiority is so obvious that no one can contest it for a moment; only its degree is worth discussion. ... Women ... represent the most inferior forms of human evolution and ... are closer to children and savages than to an adult, civilized man. They excel in fickleness, inconsistency, absence of thought and logic, and incapacity to reason. Without a doubt there exist some distinguished women ... but they are as exceptional as the birth of any monstrosity, as, for example, of a gorilla with two heads; consequently, we may neglect them entirely.<sup>82</sup>

The measurement of brain size was of critical importance in proving women's inferiority because of assumed correlations with size and intelligence, and

such a correlation is considered quite important from a biological and evolutionary standpoint ... there has been a direct causal effect, through natural selection in the course of human evolution, between intelligence and brain size. The evolutionary selective advantage of greater brain size was the greater capacity for more complex intellectual functioning. "Natural selection on intelligence at a current estimated intensity suffices to explain the rapid rate of increase of brain size in human evolution."<sup>83</sup>

A modern study by Van Valen, which Jensen concluded was the "most thorough and methodologically sophisticated recent review of all the evidence relative to human brain size and intelligence," found that the best estimate of the within-sex correlation between brain size and I.Q. "may be as high as 0.3."<sup>84</sup> Unfortunately for early evolutionists, a

correlation of 0.3% accounts for only 9% of the variance between the sexes, a difference that may be more evidence for test bias and culture than biological inferiority. Schluter even argues that in comparing the heights of men and women with brain size, "women have much larger brains than men."<sup>85</sup>

## **The Overturning of Women's Inferiority Doctrine**

Although the inferiority of women doctrine was long believed, it was increasingly scientifically investigated from the 1970s on as never before.<sup>86</sup> Modern critics of the conclusion that females were less intelligent because the female brain was smaller were often motivated by the women's movement. These critiques demonstrated major flaws in the evidence that "proved" women's inferiority, and indirectly, of major aspects of evolution theory itself.<sup>87</sup> For example, Fisher argues that the whole theory of natural selection is questionable, quoting Chomsky's words that

the process by which the human mind achieved its present state of complexity ... [is] a total mystery ... It is perfectly safe to attribute this development to "natural selection," so long as we realize that there is no substance to this assertion, that it amounts to nothing more than a belief that there is some naturalistic explanation for these phenomena.<sup>88</sup>

She also argues that modern genetic research has undermined several major aspects of Darwin's hypothesis - especially his sexual selection theory. In contrast to the requirement for Darwin's theory, "genes are not inherited along sexual lines" because, aside from the genes which are on the Y chromosome; "a male offspring receives genes from both mother and father."<sup>89</sup> Even if natural selection was to operate differentially on males and females, males would pass on many of their superior genes to both their sons and daughters. Darwin and his contemporaries had almost no knowledge of genetics, but this did not stop them from making sweeping conclusions about evolution. Darwin even made the irresponsible claim that "the characteristics of a species acquired by sexual selection are usually confined to one sex."<sup>90</sup> Yet, Darwin elsewhere recognized that women can "transmit most of their characters, including some beauty, to their offspring of both sexes," a fact he ignored in much of his writing.<sup>91</sup> He even claimed that many traits, such as genius and the higher powers of imagination and reason are "transmitted more fully to the male than the female offspring."<sup>92</sup>

**Modern genetic research has undermined several major aspects of Darwin's hypothesis - especially his sexual selection theory.**

Because Darwin believed the pangenesis theory that certain acquired characteristics could be inherited, he could accept his superiority-of-the-male-sex view. Darwin did not reject this belief even when many other naturalists realized the theory was untenable.<sup>93</sup> The decisive blow to both the theory of pangenesis and all other forms of Lamarckism was the work of August Weismann, who found that the reproductive cells of animals were

"distinct, identifiable and differentiated at an early stage of development in both males and females [and] there was no way in which the body's cells could affect the germ cells.

<sup>94</sup> The final blow was the Mendelian and De Vriesian theories of inheritance which proved that the mother and father both contributed genetic information to their male and female offspring. Ironically, this major blow to the male superiority theory that rendered it largely untenable did not cause any major widespread repudiation of it. It took the civil rights movement to force a reevaluation of attitudes which were highly ingrained in both scientific theory and the cultural norms of society.

Genetics does not totally negate the reasons which were used to conclude that females were evolutionarily inferior because some sex-linked traits would still normally be inherited only by males on the Y chromosome. Because women inherit two X chromosomes, many recessive deleterious chromosomes on one X chromosome would likely be masked by the dominant non-deleterious chromosome on her other X. Males would not have this advantage: many traits which would be masked for a female are expressed because the Y or male chromosome does not contain many X alleles. Being much shorter than the X, it has far fewer genes compared to the X chromosome. This argues for the genetic superiority of women and is why many genetic diseases such as color blindness and hemophilia are far higher among males than females. These traits, though, are often inherited by males through their mother and expressed only through sons.<sup>95</sup>

## **The Contribution of Darwin to Sexism**

Even though Darwin's theory gave birth to biologically based racism and sexism, some argue that he would not approve of, and could not be faulted for, the results of his theory. It is true that many researchers went far beyond Darwin - especially his cousin, Galton, who concluded from his life long study of the topic that "women tend in all their capacities to be inferior to men."<sup>96</sup> In an extensive review of this view, Richards concluded that "recent scholarship has emphasized the central role played by economic and political factors in the reception of evolutionary theory," but Darwinism provided "the intellectual underpinnings of imperialism, war, monopoly, capitalism, militant eugenics and racism" and sexism, and that "Darwin's own part in this was not insignificant as has been so often asserted."<sup>97</sup> After noting that Darwin believed that the now infamous social Darwinist Spencer was "by far the greatest living philosopher in England ... " Fisher concluded that the evidence for the negative effects of evolution teaching on history are unassailable:

Europeans were spreading out to Africa, Asia, and America, gobbling up land, subduing the natives and even massacring them. But any guilt they harbored now vanished. Spencer's evolutionary theories vindicated them ... Darwin's *Origin of Species*, published in 1859, delivered the *coup de grace*. Not only racial, class, and national differences, but every single human emotion was the adaptive end product of evolution, selection, and survival of the fittest.<sup>98</sup>

These conclusions of Darwinian biology about females "squared with other mainstream scholarly conclusions of the day. From anthropology to neurology, science has demonstrated that the female Victorian virtues of passivity, domesticity, and greater morality (... less sexual activity) were rooted in female biology."<sup>99</sup> Consequently, many concluded that "evolutionary history has endowed women with domestic and nurturing genes and men with professional ones."<sup>100</sup> Steinem added that

similarly, the passive, dependent, and childlike qualities of the "darker races" (then still called the "white man's burden") were part of their biological destinies. Evolutionists also chimed in with a reason for all this: men who are not Caucasian and women of all races were lower on the evolutionary scale. In the case of race, this was due to simple evolutionary time ... in the case of Caucasian women - who obviously had been evolving as long as their male counterparts - there was another rationale. The less complex nervous systems and lower intelligences of females were evolutionary adaptations to the pain of childbirth, repetitive domestic work, and other physical, nonintellectual tasks. Naturally, females of "lower" races were also ... inferior to their male counterparts.<sup>101</sup>

This conclusion about the evolutionary inferiority of women was so ingrained in biology that Morgan concludes that the intellectuals and thinkers in this area tended to "sheer away from the whole subject of biology and origins" hoping that they could ignore it and "concentrate on ensuring that in the future things will be different."<sup>102</sup> Women writing on the topic also largely ignored the Darwinian inferiority theory.<sup>103</sup> Morgan stresses that we simply cannot ignore evolutionary biology, though, because the belief of the "jungle heritage and the evolution of man as a hunting carnivore has taken root in man's mind as firmly as Genesis ever did" and that man has "built a beautiful theoretical construction, with himself on top of it, buttressed with a formidable array of scientifically authenticated facts." She argues that these "facts" must be reevaluated and that scientists have "sometimes gone astray" not purely because of prejudice, but also because of philosophical proscriptions.<sup>104</sup> The prominent evolutionary view that women are biologically inferior to men, she argues, must be challenged. In her book and scores of other works, researchers have adroitly overturned the conclusion that women are in general biologically inferior to males.

Many nineteenth century biologists argued for women's inferiority because they strongly believed that "unchecked female militancy threatened to produce a perturbation of the races and to divert the orderly process of evolution."<sup>105</sup> Other researchers took the approach that collectivists' social organization of the last century and other factors were slowly reducing the existing biological sex inequalities.<sup>106</sup>

## **The Influence of Culture on Evolution's Views of Women**

Culture was of major importance in shaping Darwin's theory. Victorian middle-class views about men were clearly included in *The Descent of Man* and the other writings of evolutionists. As argued by Richards:

Victorian assumptions of the inevitability and rightness of ... woman's role of domestic moral preceptor and nurturer and man's role of free-ranging aggressive provider and jealous patriarch - [were] enshrined in Darwin's reconstruction of human evolution. Our female progenitors ... were maternal, sexually shy, tender and altruistic, while our male ancestors were "naturally" competitive, ambitious and selfish, not unlike Darwin himself who ... wrote in *The Descent*: "Man is the rival of other men; he delights in competition ... " It was ... the natural order of things, just as man was "naturally" more intelligent than woman, as Darwin demonstrated to his satisfaction through the dearth of eminent women intellectuals and professionals: "The chief distinction in the intellectual powers of the two sexes is shown by man's attaining to a higher eminence in whatever he takes up, than can women - whether requiring deep thought, reason, or imagination, or merely the use of the senses or hands."<sup>107</sup>

Although Darwinism beliefs did much to impede human rights, many other forces existed which influenced the women's inferiority belief:

Long before Darwin, earlier "evolutionists" had likewise relegated women to a role of subjugation and inferiority in both atheistic and pantheistic religious cultures (consider the common image of the "caveman" dragging his mate by the hair, as well as the subservient role of women in practically all pagan and ethnic religions).<sup>108</sup>

The Darwinian concepts of male superiority also served to increase the secularization of society and make more palatable the acceptance of the view that humans were created by natural law rather than divine direction.<sup>109</sup> The importance of naturalism in developing the women's inferiority doctrine was emphasized by Richards:

Darwin's consideration of human sexual differences in *The Descent* was not motivated by the contemporary wave of anti-feminism ... but was central to his naturalistic explanation of human evolution. It was his theoretically directed contention that human mental and moral characteristics had arisen by natural evolutionary processes which predisposed him to ground these characteristics in nature rather than nurture - to insist on the biological basis of mental and moral differences ...<sup>110</sup>

A major method used to attack the evolutionary conclusion of female inferiority is to attack the evidence for Darwinism itself. Fisher, for example, noted that it is difficult to postulate

theories about human origins on the actual brain organization of our presumed fossil ancestors, with only a few limestone impregnated skulls - most of them bashed, shattered, and otherwise altered by the passage of millions of years [and to arrive at any valid conclusions on the basis of this] ... evidence, would seem to be astronomical.<sup>111</sup>

Hubbard adds, "Darwin's sexual stereotypes are doing well also in the contemporary literature on human evolution. This is a field in which facts are few and specimens are separated by hundreds of thousands of years so that maximum leeway exists for investigator bias."<sup>112</sup> She then discusses our "overwhelming ignorance" about human

evolution and claims that many beliefs which are currently "accepted" are pure speculation.

Many of the attempts to disprove the evolutionary view that women are intellectually inferior attack the core of evolutionary theory itself. Human group inferiority must exist in order for natural selection to have something from which to select. A good example is Shepherd, who in evaluating the evolution female inferiority theory, produced an incisive well-reasoned critique of both sexual and natural selection and Darwinism as a whole.<sup>113</sup>

**Although Darwinism beliefs did much to impede human rights, many other forces existed which influenced the women's inferiority belief.**

Evolution can be used to argue for male superiority, but it can also be used to build a case for the opposite. The evolutionary evidence "left considerable scope for individual interpretation" to the degree that some feminist authors and others have read the data as showing the evolutionary superiority of women using "the same evolutionary story to draw precisely the opposite conclusion."<sup>114</sup> One notable example is Montagu's classic book, *The Natural Superiority of Women*.<sup>115</sup> Some female biologists have even argued for a gynaecocentric theory of evolution, concluding that woman is the trunk of evolution history, and man is but a branch on the tree, a grafted scion.<sup>116</sup> Others have "tried to integrate reform Darwinist evolutionary knowledge with contemporary feminist ideals."<sup>117</sup> Hapgood even concludes that the evolutionary purpose of males is to serve females, arguing that "masculinity did not evolve in a vacuum but because it was selected." He notes that there are many species that live without males, and the fact that they do not live genderlessly or sexlessly shows that "males are unnecessary" in certain environments.<sup>118</sup> It is the woman that reproduces, and survival is important in evolution only to the degree that it promotes reproduction. Consequently, Hapgood argues, evolution theory would conclude that males were evolved only to serve females in all aspects of child production and nurturing. This includes both to insure that the female becomes pregnant and that the progeny are taken care of.

Another revisionist theory is that women were at one time in history not only superior, but dominant. This view argues that society was once primarily matriarchical and patriarchal domination was caused by factors which occurred relatively recently.<sup>119</sup> Of course, the theories that postulate the evolutionary inferiority of males suffer from many of the same problems as those that postulate women's inferiority.

## **The Use of Darwinism To Justify Behavior In Conflict With Christianity**

Some argue that many of these views that Darwin developed should again be perpetuated to justify a moral system, using evolutionism as support.<sup>120</sup> For example, Ford stated,

the idea that we have to defeat sexism is ... erroneous ... the much attacked gender differentiation we see in our societies is actually ... a necessary consequence of the constraints exerted by our evolution. There are dear factors which really do make men the more aggressive sex, for instance ... <sup>121</sup> Eberhard notes physical aggressiveness of males is justified by sexual selection, noting that: "males are more aggressive than females in the sexual activities proceeding mating (discussed at length by Darwin 1871 and confirmed many times since ... )."<sup>122</sup>

Further, the conclusion "now widely accepted ... that males of most species are less selective and coy in courtship because they make smaller investments in offspring" is used to justify male sexual promiscuity.<sup>123</sup> Male promiscuity is, in other words, genetically determined because "males profit, evolutionarily speaking, from frequent mating, and females do not."<sup>124</sup> The more females a male mates with, the more offspring he produces - whereas a female need only mate with one male to become pregnant. Evolution would progress only if she selected the most fit male, which is what Darwin's theory of sexual selection predicted. For this reason, males have "an undiscriminating eagerness" to mate, females "a discriminating passivity."<sup>125</sup> Fox even argues that high pregnancy rates among unmarried teenage girls is due to our 'evolutionary legacy' which drives young girls to get pregnant.<sup>126</sup> Consequently, cultural and religious prohibitions against unmarried teen pregnancy are doomed to fail.

After concluding that female inferiority is a result of natural selection, it is often implied that what natural selection produces is natural, thus proper, or at least it gives a "certain dignity" to behaviors that we might "otherwise consider aberrant or animalistic."<sup>127</sup> For example, evolutionary success is defined as leaving more offspring; consequently, human males are promiscuous. This explanation is used to justify both male promiscuity and irresponsibility, and trying to change "nature's grand design" is futile. Endeavoring to alter the "natural order" of female inferiority is also contrary to "nature's grand design." Symons argues that many attitude and behavioral differences between the sexes are innate, and identical rearing of males and females cannot eliminate them.<sup>128</sup>

Ghiselin concludes that many sexual behavioral differences are a result of evolution and therefore an unalterable part of our biology. Evolution evolved females to be loyal and males to be disloyal, females to lack justice, and males to be just - and changing these evolved biological differences is fraught with difficulties.<sup>129</sup> In response to these conclusions, Richards stated:

It has been left to feminist scholars who are concerned with disputing evolutionary arguments like Ghisehn's, to explore the social dimensions of Darwin's writings on the biological and social evolution of women. They are unanimous in their categorization of them as ... supporting a prejudiced and discriminatory view of women's abilities and potential ... The small section of the appropriately named *Descent of Man*, where Darwin deduced the natural and innate inferiority of women from his theory of evolution by natural and sexual selection, is fast becoming notorious in feminist literature.<sup>130</sup>

## **Conclusions and Implications for**

## Christianity

The Darwinian conclusion that women are inferior has had major unfortunate social consequences. Darwin hypothesized that sexual selection, an important evolutionary method, along with the data he and his followers gathered supporting their view of the inferiority of women, were major evidences of natural selection.<sup>131</sup> Consequently, the disproof of women's inferiority means that a major mechanism which was originally hypothesized to account for evolutionary advancement had to be modified. The data, although more complete today, are similar to those that Darwin used to develop his theory, yet we have forged radically different conclusions. This vividly demonstrates how important both preconceived ideas as well as theory were in interpreting the data. The women's evolutionary inferiority conclusion developed because, in Fee's words:

Measurement was glorified as the essential basis of science: both anatomists and psychologists wanted above everything else to be "scientific." ... Earlier psychological theory had been concerned with those mental operations common to the human race: the men of the nineteenth century were more concerned to describe human differences.<sup>132</sup>

These human differences were not researched to understand and help society overcome them, but to support and justify a theory postulated to support naturalism and also a set of social beliefs. The results that history teaches were tragic, especially in the area of racism:

it makes for poor history of science to ignore the role of such baggage in Darwin's science. The time-worn image of the detached and objective observer and theoretician of Down House, remote from the social and political concerns of his fellow Victorians who misappropriated his scientific concepts to rationalize their imperialism, laissez-faire economics, racism and sexism, must now give way before the emerging historical man, whose writings were in many ways so congruent with his social and cultural milieu.<sup>133</sup>

Hubbard goes further and calls Darwin guilty of "blatant sexism" and places a major responsibility for scientific sexism and its mate, social Darwinism, squarely at Darwin's door.<sup>134</sup> Advancing knowledge has shown many of his ideas were not only wrong, but tragically harmful, and many still adversely affect society. In Richards' words, Hubbard concluded that Darwin "provided the theoretical framework within which anthropologists and biologists have ever since been able to endorse the social inequality of the sexes."<sup>135</sup> Consequently, "it is important to expose Darwin's androcentrism, and not only for historical reasons, but because it remains an integral and unquestioned part of contemporary biological theories."<sup>136</sup>

A critical reason for Darwin's conclusion was his rejection of the biblical account that taught man and woman were specific creations of God, made not to dominate but to complement each other. In Richards' words, "For Darwin, the human races were the equivalent of the varieties of plants and animals which formed the materials of evolution in the organic world generally" and the means that formed the sexes and races were the same struggles that Darwin concluded animals underwent to both survive and mate.<sup>137</sup>

Having disregarded the Creator, Darwin needed to replace him with another - and the one he selected was the struggle between males for possession of females and food. This replaced the goal of ideal harmony that resulted from the compatibility doctrine with disharmony that resulted from his competition theory - the conclusion was that evolution favors the most vigorous and sexually aggressive males because they usually leave more progeny.<sup>138</sup>

Advancing knowledge has shown many of [Darwins] ideas were not only wrong, but tragically harmful, and many still adversely affect society.

Darwin's theory did not result from personal conflicts with women, but more from his efforts to explain creation without an intelligent creator. A person's negative attitude toward the other sex commonly results from poor experiences with that sex. In Darwin's case, from all information available from Darwin, his wife, and children and others, his marriage was exemplary. Their only major difference was in the area of religion, and this caused mostly minor problems: their devotion to each other is classic in the history of marriages of famous people. Further, as far as is known, he had an excellent relationship with all of the women in his life. His children too, especially his daughters, thought highly of Darwin and later when they felt free to talk about their home life, none of the scandals, about abusive parents or ignoring fathers that are so common today, surfaced. When Anna, their oldest daughter, died in 1851 at the age of ten, Charles was devastated and many attribute much of his hostility toward religion and God to this loss and the death of his mother when Darwin was much younger. Immediately after his daughter's death, Darwin

lay agonized in bed for hours, his stomach churning. He stopped crying long enough to see Dr. Gulley ... But when writing to Emma, he broke down again. Annie had gone "to her final sleep ... " Towards six o'clock Fanny ... found Charles still crying bitterly ... but there was something else tormenting him now. He longed to be with Emma, yet how could he go until his beloved child was buried? <sup>139</sup>

Although his critics have tried to critically scrutinize every aspect of his life, they never have found evidence that belies the conclusion that he was devoted to his wife and children, and they to him.

The Christian teaching of the equality of the sexes before God and the lack of support for female biological inferiority stand in considerable contrast to the conclusions derived by evolutionary biology in the middle and late 1800s. In this author's judgment, the history of these teachings is a clear illustration of the excesses that naturalistic thinking can lead to. It also forces the Christian community to evaluate the role of women in the church, something that is now vigorously proceeding. The Scriptures used to justify an inferior position for women in the church do not, when scrutinized, teach, and in no way justify, most of the conclusions used to support the women's inferiority doctrine.

## Notes

<sup>1</sup>Charles Darwin, *The Descent of Man and Selection in Relation to Sex* (New York: D. Appleton and Company, 1871 [1896 edition]).

<sup>2</sup>Jerry Bergman, "Eugenics and the Development of Nazi Race Policy," *Perspectives on Science and Christian Faith* 44, no. 2 (June 1992): 109-123 and George J. Stein, "Biological Science and the Roots of Nazism," *American Scientist* 76, (Jan-Feb 1988): 50-58.

<sup>3</sup>Rosaleen Love, "Darwinism and Feminism: The 'Women Question' in the Life and Work of Olive Schreiner and Charlotte Perkins Gilman" in David Oldroyd and Ian Langham (Eds.), *The Wider Domain of Evolutionary Thought* (Holland: D. Reidel, 1983), 113-131.

<sup>4</sup>Wilma George, *Darwin* (London: Fantana Paperbacks, 1982), 136.

<sup>5</sup>Evelyn Reed, *Woman's Evolution: From Matriarchal Clan to Patriarchal Family* (New York: Pathfinder Press, 1975), 45.

<sup>6</sup>Evelleen Richards, "Will the Real Charles Darwin Please Stand Up?" *New Scientist*, (Dec. 22/29 1983): 887.

<sup>7</sup>Elaine Morgan, *The Descent of Woman* (New York: Stein and Day, 1972), 1.

<sup>8</sup>Stephanie A. Shields, "Functionalism, Darwinism, and the Psychology of Women; A Study in Social Myth," *American Psychologist* 30, no. 1 (1975): 739-754.

<sup>9</sup>John R. Durant, "The Ascent of Nature in Darwin's Descent of Man" in *The Darwinian Heritage*, Ed. by David Kohn, (Princeton, NJ: Princeton University Press, 1985), 295.

<sup>10</sup>Quoted in Adrian Desmond and James Moore, *Darwin* (New York: Warner Books, 1991), 201.

<sup>11</sup>Charles Darwin, *The Autobiography of Charles Darwin 1809-1882* (Ed. by Nora Barlow), (New York: W. W. Norton & Company, Inc., 1958), 232-233.

<sup>12</sup>Ibid.

<sup>13</sup>Ibid., 234.

<sup>14</sup>Peter Brent, *Charles Darwin: A Man of Enlarged Curiosity* (New York: Harper and Row, 1981), 247.

<sup>15</sup>Richards, 886.

<sup>16</sup>Bettyann Kevles, *Females of the Species: Sex and Survival in the Animal Kingdom* (Cambridge, MA: Harvard University Press, 1986), 8.

<sup>17</sup>J. McGrigor Allan, "On the Real Differences in the Minds of Men and Women," *Journal of the Anthropological Society* 7 (1869): 210.

<sup>18</sup>Carl Vogt, *Lectures on Man: His Place in Creation, and the History of Earth*, edited by James Hunt, (London: Paternoster Row, Longman, Green, Longman, and Roberts, 1864), xv.

<sup>19</sup>Ibid., 192.

<sup>20</sup>Roger Lewin, *Bones of Contention* (New York: Simon and Shuster, 1987), 305.

<sup>21</sup>Shields, 749.

<sup>22</sup>Evelleen Richards, "Darwin and the Descent of Women," in David Oldroyd and Ian Langham (Eds.), *The Wider Domain of Evolutionary Thought* (Holland: D. Reidel, 1983), 75.

<sup>23</sup>Ibid., 74.

<sup>24</sup>Kelves, 8-9.

<sup>25</sup>George, 69.

<sup>26</sup>Charles Darwin, *The Origin of Species by Means of Natural Selection* (New York: D. Appleton and Company, 1859 [1897 edition]), 108.

<sup>27</sup>Darwin, *Descent*, 561.

<sup>28</sup>Ibid., 562.

<sup>29</sup>Michael T. Ghiselin, *The Economy of Nature and the Evolution of Sex* (Berkeley, CA: University of California Press, 1974); Mary Jane Sherfey, *The Nature & Evolution of Female Sexuality* (New York: Vintage Books, 1973); Mary Reige Laner, "Competition in Courtship" *Family Relations*, April 1986, 275-279; Kevles; W. Michael Becker and Carrie Miles, "Interpersonal Competition and Cooperation as a Function of Sex of Subject and Sex of Counterpart," *The Journal of Social Psychology* 104 (1978):303-304; John A. Phillips, *Eve: The History of an Idea* (San Francisco: Harper & Row Publishers, 1984); and Bernard Campbell, (Ed.), *Sexual Selection and the Descent of Man* 1871-1971 (Chicago: Aldine Publishing Company, 1972).

<sup>30</sup>Darwin, *Descent*, 563.

<sup>31</sup>Ibid., 557.

<sup>32</sup>Morgan, 1.

<sup>33</sup>Darwin, *Descent*, 563-564.

<sup>34</sup>Darwin, *Descent*, 564.

<sup>35</sup>Richards, *Real Charles Darwin*, 885.

<sup>36</sup>George C. Williams, *Sex and Evolution* (Princeton, NJ: Princeton University Press, 1977).

<sup>37</sup>Richards, *Darwin*, 67-68.

<sup>38</sup>Barlow, 43.

<sup>39</sup>Richards, *Darwin*.

<sup>40</sup>Darwin, *Descent*, 597.

<sup>41</sup>Shields, 742.

<sup>42</sup>George, 74.

<sup>43</sup>Ibid., 71.

<sup>44</sup>Marcia Milhnan, *Such a Pretty Face: Being Fat in America* (New York: W. W. Norton and Company, 1980) and Anne Scott Beller, *Fat & Thin: A Natural History of Obesity* (New York: McGraw Hill, 1977).

<sup>45</sup>Darwin, *Descent*.

<sup>46</sup>Shields, 743.

<sup>47</sup>L. S. Hollingworth, "Variability As Related to Sex Differences in Achievement," *American Journal of Sociology*, 19 (1914): 510-530.

<sup>48</sup>Shields.

<sup>49</sup>Ibid., 739.

<sup>50</sup>Lester D. Stephens, "Evolution and Women's Rights in the 1890s: The views of Joseph LeConte," *The Historian* 38, no. 2 (1976):241.

<sup>51</sup>Ibid., 247.

<sup>52</sup>Helen E. Fisher, *The Sex Contract: The Evolution of Human Behavior* (New York: William Morrow and Company, Inc., 1982), 115-116.

<sup>53</sup>Quoted in Stephen Jay Gould, *The Mismeasure of Man* (New York: W. W. Norton & Company, 1981), 104.

<sup>54</sup>Darwin, *Descent*, 563.

<sup>55</sup>Gwynne Dyer, *War* (New York: Crown Publishers, Inc., 1985), 17?.

<sup>56</sup>Williams, 138-139.

<sup>57</sup>Donald Symons, *The Evolution of Human Sexuality*, (New York: Oxford University Press, 1980), 162,

<sup>58</sup>Williams, 138.

<sup>59</sup>George, 74.

<sup>60</sup>Richards, Darwin, 78.

<sup>61</sup>Dyer, 122.

<sup>62</sup>Gould, 84.

<sup>63</sup>Shields.

<sup>64</sup>Ann Gibbons, "The Brain as 'Sexual Organ.'" *Science*, Aug. 30, 1991, 958.

<sup>65</sup>Richards, *Real Charles Darwin*, 886-887.

<sup>66</sup>Carol Tavris, *The Mismeasure of Women: Why Women Are Not the Better Sex, the Inferior Sex, or the Opposite Sex* (New York: Simon and Schuster, 1992), 97.

<sup>67</sup>Ibid., 97.

<sup>68</sup>Leigh Van Valen, "Brain Size and Intelligence in Man," *American Journal of Physical Anthropology* 40, (1974): 417-423.

<sup>69</sup>Darwin, *Descent*, 54.

<sup>70</sup>Elizabeth Fee, "Nineteenth-Century Craniology: The Study of the Female Skull," *Bulletin of the History of Medicine*, 53 (1979): 415.

<sup>71</sup>Gould, 83.

<sup>72</sup>Quoted in Gould, 83, 188.

<sup>73</sup>Ibid., 85.

<sup>74</sup>Ibid., 103.

<sup>75</sup>Quoted in Gould, 104.

<sup>76</sup>Ibid., 104.

<sup>77</sup>Ibid., 85.

<sup>78</sup>Ibid.,

<sup>79</sup>Havelock Ellis, *Man and Women: A Study of Secondary and Tertiary Sexual Characteristics*. (London: Heineman, 1934).

<sup>80</sup>Shields, 390.

<sup>81</sup>Shields, 740-742.

<sup>82</sup>Quoted in Gould, 104-105.

<sup>83</sup>Arthur Jensen, *Bias in Mental Testing* (New York: The Free Press, 1980), 361.

<sup>84</sup>Ibid., 361 and Van Valen, 417.

<sup>85</sup>Dolph Schluter, "Brain Size Differences," *Nature* 359, Sept. 17, 1992, 181.

<sup>86</sup>Fee, 415.

<sup>87</sup>Flavia Alaya, "Victorian Science and the 'Genius' of Women," *Journal of the History of Ideas* 38 (1977): 261-280.

<sup>88</sup>Noam Chomsky, *Language and Mind* (New York: Harcourt, Brace and World, 1972), 97.

<sup>89</sup>Elizabeth Fisher, *Woman's Creation: Sexual Evolution and the Shaping of Society* (Garden City, NY: Anchor Press/Doubleday, 1979), 112.

<sup>90</sup>John Hurrell Crook, "Sexual Selection, Dimorphism, and Social Organization in the Primates," in Campbell (Ed.), *Sexual Selection and the Descent of Man 1871-1971* (Chicago: Aldine Publishing Company, 1972).

<sup>91</sup>Darwin, *Descent*, 597.

<sup>92</sup>Ibid., 565.

<sup>93</sup>George, 63.

<sup>94</sup>Ibid., 63.

<sup>95</sup>Sarah Blaffer Hardy, *The Woman That Never Evolved* (Cambridge, MA: Harvard University Press, 1981).

<sup>96</sup>Shields, 743.

<sup>97</sup>Richards, *Darwin*, 88.

<sup>98</sup>Fisher, 116.

<sup>99</sup>Gloria Steinem, *Revolution from Within: A Book of Self-Esteem* (Boston: Little, Brown and Company, 1992), 133.

<sup>100</sup>Ruth Hubbard, Mary Sue Henifin and Barbara Fried, *Women Look at Biology Looking At Women: A Collection of Feminist Critiques* (Cambridge, MA: Schenkman Publishing Co., 1979), 208.

<sup>101</sup>Steinem, 133-134.

<sup>102</sup>Morgan, 2.

<sup>103</sup>For example, see Lynn Margulis and Dorion Sagan, *Origins of Sex: Three Billion Years of Genetic Recombination* (New Haven: Yale University Press, 1986) and Nancy Tanner and Adrienne Zihlman, "Women in Evolution. Part I: Innovation and Selection in Human Origins," *Signs: Journal of Women in Culture and Society* 1, no. 3 (1976): 585-608.

<sup>104</sup>Morgan, 2-3.

<sup>105</sup>Fee, 415.

<sup>106</sup>Elisabeth Mann Borgese, *Ascent of Women* (New York: Braziller, 1963).

<sup>107</sup>Richards, *Real Charles Darwin*, 885.

<sup>108</sup>Henry Morris, *The Long War Against God* (Grand Rapids, MI: Baker Book House, 1989), 135.

<sup>109</sup>George.

<sup>110</sup>Richards, Darwin, 97.

<sup>111</sup>Fisher, 113.

<sup>112</sup>Ruth Hubbard, "Have Only Men Evolved?" in *Women Look at Biology Looking At Women*, Ed. by R. Hubbard, et al., (Cambridge, MA: Schenkman Publishing Co., 1979), 26.

<sup>113</sup>Linda Jean Shepherd, "Lift@g the Veil: The Feminine Force" in *Science*, (Boston: Shambhala, 1993).

<sup>114</sup>Love, 124.

<sup>115</sup>Ashley Montagu, *The Natural Superiority of Women* (New York: Lancer Books, 1952).

<sup>116</sup>Mary A. Hill, Charlotte Perkins Gilman: The Making of a Radical Feminist 1860-1896 (Philadelphia: Temple University Press, 1980).

<sup>117</sup>Ibid., 263.

<sup>118</sup>Fred Hapgood, *Why Males Exist; An Inquiry Into the Evolution of Sex* (New York: William Morrow and Company, Inc., 1979), 24.

<sup>119</sup>Reed.

<sup>120</sup>Steven Goldberg, *The Inevitability of Patriarchy: Why the Biological Difference Between Men and Women Always Produces Male Domination* (New York: William Morrow & Company, Inc., 1973).

<sup>121</sup>Brian J. Ford, *Patterns of Sex: The Mating Urge and our Sexual Future* (New York: St. Martin's Press, 1980), 8.

<sup>122</sup>William G. Eberhard, *Sexual Selection and Animal Genitalia* (Cambridge, MA: Harvard University Press, 1985), 67.

<sup>123</sup>Ibid.

<sup>124</sup>Tavris, 214.

<sup>125</sup>Ibid.

<sup>126</sup>Robin Fox, *The Red Lamp of Incest* (New York: E. P. Dutton. 1980).

<sup>127</sup>Symons, 61.

<sup>128</sup>Ibid.

<sup>129</sup>Ghiselin, 13,

<sup>130</sup>Richards, Darwin, 59-60.

<sup>131</sup>S. Sleeth Mosedale, 'Corrupted - Victorian Biologists Consider 'The Women Question,'" *Journal of the History of Biology* 9 (1978):1-55.

<sup>132</sup>Fee, 419.

<sup>113</sup>Richards, *Real Charles Darwin*, 887.

<sup>134</sup>Hubbard.

<sup>135</sup>Richards, *Darwin*, 60.

<sup>136</sup>Hubbard, 16.

<sup>137</sup>Richards, Darwin, 64.

<sup>138</sup>Hubbard.

<sup>139</sup>Desmond and Moore, 384.