



Evolution / Évolution

Darwin on woman

Darwin et la femme

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ABSTRACT

In his 1871 book *The Descent of Man*, Darwin exposed the idea of sexual selection as a major principle of human evolution. His main hypothesis, which was already briefly presented in *The Origin of Species*, is that there exists, besides “natural selection”, another form of selection, milder in its effect, but no less efficient. This selection is operated by females to mate and reproduce with some partners that are gifted with more qualities than others, and more to their taste. At more evolved stages, sexual selection was exerted by men who became able to choose the women most attractive to their taste. However, Darwin insists, sexual selection in the human species is limited by a certain number of cultural practices. If Darwin’s demonstration sometimes carried the prejudices of his times regarding gender differences he was the first who took into account the importance of sexual choices in his view on evolution, and who insisted on the evolutionary role of women at the dawn of humanity. Thus, he opened the space for a rich reflection, which after him was widely developed and discussed in anthropological and gender studies.

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RÉSUMÉ

Dans son livre de 1871, intitulé *La Descendance de l'Homme*, Darwin présente la sélection sexuelle comme un principe majeur de l'évolution humaine. Son hypothèse principale, déjà brièvement annoncée dans *l'Origine des espèces*, est qu'il existe, à côté de la « sélection naturelle », une autre forme de sélection, plus douce dans ses effets, mais non moins efficace : celle qui résulte du choix des femelles de s'accoupler et de se reproduire avec des partenaires doués à leurs yeux de plus de qualités que les autres, et mieux à leur goût. Aux stades ultérieurs de l'évolution humaine, la sélection sexuelle fut exercée par les hommes, devenus capables de choisir les femmes qui leur plaisaient le mieux. Cependant, Darwin insiste sur le fait que la sélection sexuelle est limitée dans les sociétés humaines par un certain nombre de pratiques culturelles. Si la démonstration de Darwin révèle parfois les préjugés sexistes de son temps, il fut le premier à prendre en compte l'importance des choix sexuels dans l'évolution, et le rôle joué par les femmes à l'aube de l'humanité, ouvrant par là même l'espace d'une riche réflexion abondamment développée et discutée dans les différentes orientations contemporaines de l'anthropologie et dans les études sur le genre.

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1. Introduction

In 1838, after his return from his voyage on the Beagle, Darwin hesitated on how he would organize his life. Would

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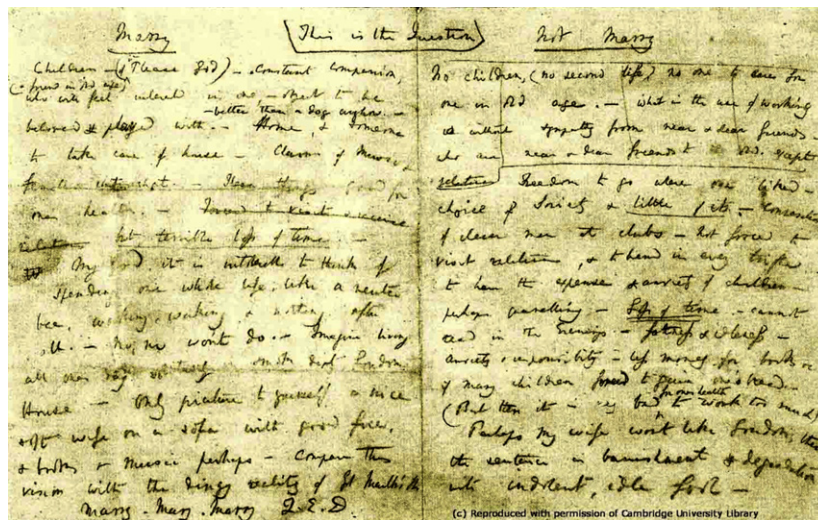


Fig. 1. Charles Darwin's Notebooks Memorandum on marriage (1838).

"Marry/not marry this is the question

Children – (if it Please God) – Constant companion, (& friend in old age) who will feel interested in one, – object to be beloved & played with. – better than a dog anyhow. – Home, & someone to take care of house – Charms of music & female chit-chat. – These things good for one's health. – Forced to visit & receive relations but terrible loss of time. –

W My God, it is intolerable to think of spending ones whole life, like a neuter bee, working, working, & nothing after all. – No, no won't do. – Imagine living all one's day solitarily in smoky dirty London House. – Only picture to yourself a nice soft wife on a sofa with good fire, & books & music perhaps – Compare this vision with the dingy reality of Grt. Marlbro' St.

Marry – Marry – Marry Q.E.D.

Not Marry

No children, (no second life), no one to care for one in old age. – What is the use of working 'in' without sympathy from near & dear friends—who are near & dear friends to the old, except relatives

Freedom to go where one liked – choice of Society & little of it. – Conversation of clever men at clubs – Not forced to visit relatives, & to bend in every trifle. – to have the expense & anxiety of children – perhaps quarrelling – **Loss of time.** – cannot read in the Evenings – fatness & idleness – Anxiety & responsibility – less money for books &c – if many children forced to gain one's bread. – (But then it is very bad for ones health to work too much)

Perhaps my wife wont like London; then the sentence is banishment & degradation into indolent, idle fool –"

he become a clergyman like his mentor Henslow or remain a bachelor like his brother Erasmus? In a curious note of July 1838 [2], under the title "Marry or not marry, this is the question"... he drew up a list of the advantages and inconveniences of marriage (Fig. 1).

He wrote, listing reasons for not marrying:

"Freedom to go where one liked; choice of Society & little of it. – Conversation of clever men at clubs – Not forced to visit relatives, & to bend in every trifle. – To have the expense & anxiety of children – perhaps quarrelling – Loss of time. – cannot read in the Evenings – fatness & idleness – Anxiety & responsibility – less money for books".

... and reasons for marriage:

"Children – (if it Please God) – Constant companion, (& friend in old age) who will feel interested in one – object to be beloved & played with. – better than a dog anyhow [...].

Finally the arguments for a union won the day: "Marry, marry, marry, Q.E.D.", he concluded, perhaps horrified by his vision of the solitary scholar:

"My God, it is intolerable to think of spending one's whole life, like a neuter bee, working, working, and nothing after all – No, no, won't do.

Imagine living all one's day solitarily in smoky dirty London House.

Picture yourself with a nice soft wife on a sofa with a good fire and books and music perhaps compare this vision with the dingy reality of Great Marlboro Street, London".

A few months later he proposed marriage to his first cousin Emma Wedgwood. He married Emma on January 29, 1839 [3]. The Darwins settled in a house on Gower Street in London, and within a few years moved to the country, to the village of Downe, Kent, only 16 miles from London but remote from easy access to the city. Emma brought to him a fortune, gave him 10 children, and her skills as a housewife enabled him to work in peace for the next 40 years. Much has been already commented about Emma's influence in shaping the expression of Darwin's thinking, and in particular his prudence regarding religion.

One can wonder whether, while he wrote about the question of sexual choice in *The Descent of Man in Relation to Sex* (1871) [1], Darwin had in mind his own hesitations regarding marriage. However, while his reflection of 1838 did not contain any biological statement – and even less allusion to sex – his 1871 book proposed a lengthy reflection on human sexual choices and the differential roles of men and women in human evolution.

What exact role did women play in the evolution of humanity? Did they follow passively the “progress” of males on the way of becoming human or did they contribute (and in what) in fashioning today’s human features? In other words, did men and women play a similar role in human evolution, to produce the features that our species presents today? These questions are today at the forefront of many anthropological inquiries, both in feminist anthropology and in the speculative models which were produced in palaeo-anthropology and prehistoric archaeology during the second half of the 20th century, to feature the hominization process. It can be said that reflexions on these issues were initiated by Darwin in his book *The Descent of Man*.

2. The place of woman in Prehistoric sciences before 1871

The year 1859, which dates the publication of Darwin’s *Origin of Species* [4], is also generally given as the birth date of Prehistoric sciences, although these domains did not interact much at their initial stage. Darwin remained extremely elusive about human evolution in *The Origin of Species*, while many pioneers of Prehistoric archaeology did not take any account Darwin’s evolutionary theses, and not even of the idea of human evolution [5].

Prehistoric sciences as a field of research covers a number of disciplines, which became more or less prominent in the course of their history: palaeo-anthropology – the study of fossil remains of early humans; prehistoric archaeology – the study of remains of their material cultures; cultural anthropology, and later additions of primatology, genetics and molecular biology: a wide array of disciplines at the articulation of nature and culture. Prehistory had been defined as an immense period of time, covering the whole duration of the existence of the human family until the invention of writing. Since 1865, different epochs started to be differentiated in the course of the Palaeolithic era, mainly focusing on European material [6].

Mid-nineteenth century scientists generally denied the possibility of precisely identifying gender differences through archaeological and palaeontological research, stressing the scarcity of fossil remains and the fact that women were “archaeologically invisible” [7]. It is indeed difficult to find evidence for anatomical gender differentiation in the rare skeletal material that paleontologists dig out, and dramatic revisions have occurred in this regard in the course of the history of palaeo-anthropology. For a long time, archaeological evidence in this domain consisted mainly in flint objects that were described and classified, but whose use was rarely perfectly understood. Who made them and used them was not considered then a relevant

question. This did not prevent scientific treatises as well as popular depictions of the time to focus on “Prehistoric Man”, typically stressing the “virile” aspect of his activities and conquests [8]. “Man the hunter”, “Man the toolmaker”, “Man the artist”, such were the paradigms of Palaeolithic humanity which were then constructed and illustrated in engravings, paintings and book illustrations [9,10]. If women had a place in these representations, it was often inspired by stereotypic visions, either as wild fancies of sexual violence, referring to the presumed barbarity of these primitive times, or as the canonical model of the traditional monogamous family, in which women had as an only role to look after children and wait at home for the return of the conquering males.

However, ever since the 19th century, women were not totally absent from archaeological scene. Knowledge about women in the Palaeolithic was indeed provided on the one hand by the study of fossil hominids remains, and on the other hand by iconic representations that are known since the inception of the Upper Palaeolithic, with the arrival of *Homo sapiens* in Europe. Palaeolithic art provided important elements to access prehistoric cultures, societies and symbols, and in particular for a reflection on women in Prehistory [7]. By the first decades of the 20th century, Gravettian sites yielded an abundance of sculpted feminine figures. From the Atlantic shores to the Don Valley, palaeolithic Venuses with opulent shapes sculpted in ivory, bone or limestone or modeled in clay, realistic or schematic feminine figures engraved in rock, representations of “vulvas” on cave walls, were discovered. The Venuses of Laussel, Lespugue, or Brassempouy in France, of Willendorf in Austria, Dolni Vestonice in Moravia, Avdievo and Kostienki in the Russian plain, give the most ancient versions of these portraits of women; by the end of the Upper Palaeolithic, more slender and luscious figures will appear, such as those engraved in relief at La Madgeleine or Angles sur l’Anglin [11].

Are these human representations realistic, do they give an accurate view of the appearance of the female body in these early times [12]? Are they a religious expression of fertility rituals [13], or the symbolical affirmation of social values or categories [14]? Are they the inscription of blunt sexual desire and practices or even, as was recently claimed [15], the prehistoric equivalent of our pornography? These inquiries into the place of women in the Palaeolithic, essentially provided by Palaeolithic artistic representations, influenced interpretations and reconstructions for more than a century. Yet Darwin’s reflection was to take another path.

3. The concept of sexual selection and its relevance to Humans

Darwin’s 1871 book proposed sexual selection as a major process in human evolution. In 1868, as he undertook the writing of this work some 10 years after the publication of his *Origin of Species*, he chose to view human evolution from a different angle than his contemporaries, prehistorian Gabriel de Mortillet [6], anatomist Thomas-Henry Huxley [16] or embryologist Ernst Haeckel [17], who had previously dealt with the

question. His main hypothesis, which had been already briefly presented in the *Origin of Species*, is that in sexed animals there exists besides *natural selection* – which is the main cause for the appearance of new species – another form of selection, milder in its effect, but no less efficient. This *Sexual Selection* is operated by females (sometimes by males) to mate and reproduce with some partners that are gifted with more qualities than others, and more to their tastes. “[Sexual selection] depends, Darwin wrote, on the advantage which certain individuals have over others of the same sex and species, solely in respect of reproduction” [1, chap. VIII: 209].

Until then, Darwin had refrained from writing on human origin, a dangerous topic in regard to religious beliefs in his time. If in 1868 he finally decided to write on the topic, it is not only because of his friends' encouragements (Huxley, Asa Gray, Wallace and Spencer had urged him to do so) but mostly because he wanted to develop a new and original argument on the mechanisms of life evolution, and to demonstrate that there exists, besides natural selection, another process at work in the descent of species.

Darwin's argument starts with the demonstration of the essential role of behaviors that are linked to the choice of a sexual partner in the evolution of a species, in all sexed animals: Arthropods, Insects, Amphibians, Reptiles, Birds and Mammals, and among the latter Primates [1, chap. IX–XVIII]. Darwin then applies his demonstration to the human species, providing thus new evidence to the fact that Man belongs to the animal kingdom, as he shares with other animals not only his morphology, embryology, but also the expression of his emotions, sexual choices and reproductive behaviour. Indeed, one major issue in *The Descent of Man* is to show in human anatomical features, as well as in the detail of human sexual dimorphism and reproductive behaviour, characters which also belong to the whole animal reign.

Writing about sexual selection in Humans thus means both to present a general argument on a process which characterizes the whole sexed world and a specific hypothesis on human evolution. Darwin first observed that some anatomical features characterize one gender in particular: these features have a significance which seems to be related to reproductive choices. Sexual selection explains for example the coloured feathers and bright singing of male birds, and the fact that in many animal species, the head of the male often carried antlers or horns: these ornaments have a double role, as they allow them to enter in competition with other males to conquer females. Indeed, in most animal species, females choose males for mating and reproducing, the male being more adorned than the female, who often remains bleaker.

Similarly, there are particular features in Humans which only belong to one gender, and there are good chances that these features appeared a very long time ago, and were selected by natural selection. They characterize body appearance (size and position of teeth, hair, and skin colour) but also behaviour (sound of the voice and ability to sing, strength, aggressiveness, ability to fight in males, beauty, kindness and generosity in women). Sexual selection, Darwin argues, played an essential role in

human history, and it probably happened at several levels. It could be of two kinds [1, chap. XXI: 614]: either a fight takes place between two individuals of the same sex (generally males) in order to eliminate their challengers, while females remain passive – this has been named today *intra-sexual* selection [18] – or it takes place when females chose the most attractive partner – what is called today *inter-sexual* selection. The latter form of selection (by women) was, according to Darwin, dominant in the earliest stage of human history:

“The early progenitors of man must have been once covered with hair, both sexes having beards; their ears were probably pointed and capable of movement; and their bodies were provided with a tail, having the proper muscles” [1, chap. VI: 160].

In these earliest times of human existence, Darwin explains, women were probably those who chose and selected males with whom they copulated, thus modifying by their repeated choices their body aspect and behaviour. For example, the appearance of hair, beard and moustache, the form and position of teeth, the body beauty, the softness of the voice, the ability to sing, strength and ability to fight:

“When the females are the selectors, and accept only those males which excite or charm them most, we have reason to believe that it formerly acted on our progenitors”. Darwin writes: “Man in all probability owes his beard, and perhaps some other characters, to inheritance from an ancient progenitor who thus gained his ornaments. But this form of selection may have occasionally acted during later times; for in utterly barbarous tribes the women have more power in choosing, rejecting, and tempting their lovers, or of afterwards changing their husbands, than might have been expected” [1, chap. XX: 597].

But Darwin limits the pre-eminence of woman's choice to the most ancient – or most primitive – period of our evolutionary history.

In *The Descent of Man*, he provides a vast array of examples drawn from contemporary anthropological literature, especially from the works of John Lubbock, and one of the most active proponents of “cultural evolutionism” [19].

[In Arctic America], “a woman in one of the tribes... repeatedly ran away from her husband and joined her lover; and with the Charruas of S. America [...] divorce is quite optional. Amongst the Abipones, a man on choosing a wife bargains with the parents about the price. [But] “it frequently happens that the girl rescinds what has been agreed upon between the parents and the bridegroom, obstinately rejecting the very mention of marriage”. She often runs away, hides herself, and thus eludes the bridegroom [...] In Tierra del Fuego, a young man first obtains the consent of the parents by doing them some service, and then he attempts to carry off the girl; “but if she is unwilling, she hides herself in the woods until her admirer is heartily tired of looking for her, and gives up the pursuit; but this seldom happens [...] In the Fiji Islands, the man seizes on the woman whom he wishes for his wife

by actual or pretended force; but “on reaching the home of her abductor, should she not approve of the match, she runs to someone who can protect her; if, however, she is satisfied, the matter is settled forthwith“. With the Kalmucks, there is a regular race between the bride and bridegroom, the former having a fair start; and Clarke “was assured that no instance occurs of a girl being caught, unless she has a partiality to the pursuer” [1, chap. XX: 597–599].

All these examples of “savage behaviour” demonstrate according to Darwin the importance of woman’s choice in the primitive times of humanity.

“We thus see that with savages that women are not in quite so abject a state in relation to marriage as has often been supposed. They can tempt the men whom they prefer, and can sometimes reject those whom they dislike, either before or after marriage. Preference on the part of the women, steadily acting in any one direction, would ultimately affect the character of the tribe; for the women would generally choose not merely the handsomest men, according to their standard of taste, but those who were at the same time best able to defend and support them. Such well-endowed pairs would commonly rear a larger number of offspring than the less favoured. The same result would obviously follow in a still more marked manner if there was selection on both sides; that is, if the more attractive, and at the same time more powerful men were to prefer, and were preferred by, the more attractive women. And this double form of selection seems actually to have occurred, especially during the earlier periods of our long history” [1, chap. XX: 599–600].

At later stages, sexual selection may have taken other shapes. It became then exerted by men who could choose the most attractive women to their tastes. The fact that in the human species the female is “more highly ornamented” [1, chap. XX: 596] than the male tends to make one think that it is not the female, but mostly the male who chooses his mate. “The most vigorous and strongest males – those who could best defend a family and hunt for its food, those who had the best arms and possessed more goods, such as dogs and other animals – could raise more children than individuals who were poorer and weaker in the same tribe. No doubt these men could generally choose more attractive women” [1, chap. XX: 595]. This is why, Darwin adds, “women are everywhere conscious of the value of their own beauty; and when they have the means, they take more delight in decorating themselves with all sorts of ornaments than men do. They borrow the plumes of male birds, with which nature has decked this sex, in order to charm the females” [1, chap. XX: 597] (Fig. 2). A singular exchange by which, in the order of human culture, women borrow to nature the seductive arms of the males in order to improve their own seduction. . .

But sexual selection is also characterized by the fact that it tends to normalize, and to make that what was chosen as exceptional tends, by repetition, to become more and more usual and banal in the species: as women have long been selected for beauty, it is not surprising, Darwin adds, “that some of their successive variations should have been transmitted exclusively to the same sex; consequently that they should have transmitted beauty in a somewhat higher degree to their female than to their male offspring,



Fig. 2. British 19th century cartoons, from *Punch* 23 April 1870 and 1 April 1871, by Edward Linley Sambourne: “I would I were a bird” and “Mr Punch’s Designs after Nature. Grand Back-Hair Sensation for the coming season”. These wood-engravings perfectly illustrate Darwin’s phrase: “women. . . take more delight in decorating themselves with all sorts of ornaments than men do. They borrow the plumes of male birds, with which nature has decked this sex in order to charm the females” They also put this remark into context by giving us a glimpse at fashion’s follies in Darwin’s time, and in particular the extravagant “craze for feathers” in women’s dressing.

See J. Munro [20], “More like a work of art than of nature: Darwin, Beauty and Sexual Selection” in *Endless Forms, Charles Darwin, Natural Science and the Visual Arts*, Yale University Press, 2009, pp. 253–291.

and thus have become more beautiful, according to general opinion, than men. Women, however, certainly transmit most of their characters, including some beauty, to their offspring of both sexes; so that the continued preference by the men of each race for the more attractive women, according to their standard of taste, will have tended to modify in the same manner all the individuals of both sexes belonging to the race" [1, chap. XX: 597].

Thus sexual selection could, in time, embellish the whole species – but in different ways within distinct human groups: for human choices, Darwin adds, cannot be separated from cultural specificities, and different beauty "canons" are at work in specific cultures, reflecting particular tastes in different social groups. Therefore, aesthetic choices increase the differences from one group to another: sexual selection could well be the origin of diversification of human groups in races [1, chap. VII; I, XX: 572–585]. "I conclude that of all the causes which have led to the difference in external appearance between the races of Man. . . Sexual Selection has been the most efficient" [1, chap. XX: 606].

4. Limits to sexual selection

However, Darwin insisted, sexual selection within the human species is limited by a certain number of cultural practices. In what he called "savage tribes", by promiscuity, which has as a consequence that sexuality is not the result of a choice; by infanticide of girls which exists in a number of "primitive" societies, or by early arranged marriages which make the choice impossible, and more generally, by the slavery in which certain primitive societies hold women. In civilized peoples, advantages such as fortune and social position take over the selection of reproductive capacity or even of beauty: women tend to select in the choice of their mates not blunt strength, but other criteria. "Although in civilised nations women have free or almost free choice, which is not the case with barbarous races, yet their choice is largely influenced by the social position and wealth of the men; and the success of the latter in life depends much on their intellectual powers and energy, or on the fruits of these same powers in their forefathers" [1, chap. XX: 586]. They also tend to select their ability in the terrible fight for survival in our modern societies, and to work in order to raise a family.

Until today in "civilized" countries, Darwin notes, sexual selection plays a role in modifying the appearance of the different social classes: "our aristocracy, including under this term all wealthy families in which primogeniture has long prevailed, from having chosen during many generations from all classes the more beautiful women as their wives, have become handsomer, according to the European standard, than the middle classes" [1, chap. XX: 587]; the notion of selection expressed here by Darwin seems to endorse the ideas exposed by Galton – Darwin's cousin and theoretician of "eugenics" [21] – according to whom it would be possible to improve today's human species by favouring the reproduction of its elites.

Through Darwin's demonstration are perceptible the prejudices of his time. In some of his notes, assertions or metaphors, one recognizes the Victorian gentlemen's look

upon the society of his time, and the place of women in that society. If Darwin's own attitude towards women seems to reveal respect and intellectual esteem, it is clear that some of his views on women colored his scientific insights. "The female is less eager than the male", he wrote, "She is coy", and when she takes part in choosing a mate, she chooses "not the male which is most attractive to her, but the one which is least distasteful" [1]. Regarding sexual dimorphism in the human species, Darwin wrote: [in Humans] "Male and female children resemble each other closely, like the young of so many other animals where the adult sexes differ widely; *they likewise resemble the mature female much more than the mature male. The female, however, ultimately assumes certain distinctive characteristics, and in the formation of her skull, is said to be intermediate between the child and the man*" [1, chap. XIX: 557] (my italics).

This remark has been commented many times. Read as an anatomical statement, it can be interpreted as a reference to neoteny, stressing the fact that human beings are juvenile-looking descendants of their more apish ancestors, women then being more "paedomorphic" than men, and therefore more highly "evolved" than them [22]. However Darwin's remark mainly refers here to common knowledge ("it is said to be. . .") and to the moral code of a society in which woman is indeed considered not as a responsible adult, but as an intermediary between Man and Child, a constantly dependant being who needs the custody of a father or a husband [23]. Similarly, the "conformation of the skull", which according to the physical anthropology of the time is a measure of intelligence [24], also makes woman an "intermediary" between Man and Child. While he exposed his ideas on sexual selection, Darwin thus repeated a number of clichés on the characteristics of each sex: what is a distinctive feature of woman (what has been selected by men) is beauty, reproductive capacity, and psychological qualities such as affection, attention to children – while strength, intelligence and creativity are male attributes. This is, according to Darwin, the "natural" role of women. He argues for example that only men are intelligent, creative, and capable of learning, and that it would be hard to obtain similar results in women. To modify those features by education, Darwin wrote to American student Caroline Kennard in January 1882 [25], would require a very long time of learning. Moreover, Darwin added, "we may suspect that the easy education of our children, not to mention the happiness of our homes, would in this case greatly suffer".

5. The reception of Darwin's ideas: sexual selection and women's role in hominization

By the time Darwin published *The Descent of Man*, new orientations in cultural anthropology inspired by his evolutionary views had developed [26], which were to put the evolution of the family and the history of human marriage since prehistoric times at the foreground of anthropological research. The methods of "cultural evolutionism" relied on the hypothesis of a gradual and progressive development of human cultures, and on the

idea that today's "primitive societies" retain cultural features that were present at the earliest periods of humanity. Works by John Lubbock [19], Edward Tylor [27], Herbert Spencer [28], Edward Westermarck [29], John Ferguson McLennan [30], Lewis Henry Morgan [31], and even Sigmund Freud [32], illustrate this important scientific and ideological trend. These anthropologists described the evolution of societies through the changing structures of the family, from primitive sexual promiscuity to exogamy, from matriarchy to the appearance of our modern patriarchal societies.

The idea that matriarchy was the first form of primitive societies became central to these anthropological constructions. This theme had been first theorized by Basel jurist Johann Jakob Bachofen, in a 1300 pages book entitled *Das Mutterrecht* [33], published in 1861. Bachofen found in ancient Greek histories and myths arguments to the fact that women had played a dominant role in the early history of humanity: Gynecocracy, the reign of Mother, was then overcome by patriarchal structures such as those we know now. Bachofen's work was severely criticized in his time, in particular for its method, which proposed to read myths as real historical documents. However his considerations on matriarchy as the first stage of human societies echoed Darwin's statement about women's sexual choices in the most primitive human societies; were taken up by "Darwinian" cultural anthropologists of the time, and were later to have great success in feminist circles.

Cultural evolutionism, whose speculations were based on the view of linear and progressive biological evolution, informed the perception of prehistoric cultures, seen as analogical to contemporary "primitive" societies. Starting in 1920, such anthropologists as Franz Boas [34] and Claude Lévi-Strauss [35] radically criticized this dominant concept in the anthropology of the time, showing that the diversity of human cultures cannot be reduced to a simplistic evolutionary scheme and to linear progress. In the field of prehistory, this critique raised in particular the question of the heuristic value of ethnographical comparison and the use of ethnographical models to understand prehistoric cultures [36–38].

Attempts to conceive of human cultural development in evolutionary terms return today under new forms. Sociobiology [39] and evolutionary psychology [40] claim to derive from Darwin's selectionism considerations on cultural behaviors and social practices.

Sociobiology considers individuals in social groups (and humans in particular) essentially as bearing genes whose only aim is to reproduce themselves, thus essentially accounting for human behavior through reproductive strategies [41]. In this approach to social and cultural behavior, the process of sexual selection described by Darwin plays a central role. In recent decades, this orientation has influenced the elaboration of "hominization scenarios" which relied on such processes to account for the emergence of specifically human behavior. For example, the model "Man the Hunter", strongly informed palaeo-anthropology and prehistoric scenarios all through the second part of the 20th century [42]: according to it, hunting (essentially a male activity) explains the emer-

gence of tool and technical behavior, the development of intelligence and group strategies [43]. It was now modified and expanded to take into account reproductive strategies, stating for example that successful hunters could feed and seduce more women and thus produce more abundant offspring [44]. Individuals being essentially carriers of genes acting on behalf of their reproduction, it follows that polygamy, infidelity and even rape may be viewed as biologically "normal" and perhaps even socially justifiable because they are genetically determined [45]: an absurd reduction of most cultural practices to unconscious and biological determinism and a justification of what, in all human societies, tends to be discarded as contrary to the fundamental rules of human behavior.

These conceptions, widely popularized and influential today, have raised a number of critiques which denounced their ideological or political preconceptions, their gender biases, and even more radically the construction of such speculations, whose narrative forms only little differ from myths and fairy tales [46].

Taking up these different critiques, American feminism attempted to refute "androcentric" representations involved in these considerations of the hominization process. From the 1970s, prehistory became a new battleground for feminist action: the "Promethean" model of the conquering male had then to be replaced by new visions of the prehistoric past in which women occupied the central role. Works by Sally Slocum [47], Adrienne Zihlman [48], Nancy Tanner [49], and many others, aimed to transform radically the representations of women's roles and activities since the beginnings of Prehistory. To the model according to which big-game hunting appeared as a key feature to human social evolution, could then be opposed the figure of "Woman the Gatherer". On the one hand, their critiques denounced machist prejudices in the models previously elaborated; on the other hand they demonstrated the importance of the role of women in the emergence of humankind, not only for its reproductive success, but also to shape its adaptive features [47]. The key to explain the very process of hominization is not hunting, it is another activity essential to the survival of the species: gathering (picking up plants, fruits, gathering small animals and shells). Prehistoric women, far from being sedentary and passive good-for-nothings in an evolving group under male dominance, were the inventors of the gestures and the tools for gathering; they were also able to initiate altruistic and sharing behavior within the group. And if one is to take seriously Darwin's idea of sexual selection, it was *women* who first selected men for mating, preferring the more sociable and gentle, those who were willing to share food, to help them in their domestic tasks, to rear and educate children.

These elements brought novel views into the picture of human evolution. In the remote past of humanity, one had now to imagine, instead of the primeval herd dominated by a conquering male, groups with feminine dominance under which children were assembled, and in which men were only present marginally, being only accepted if they were willing to collaborate to the survival of the collectivity. Feminist anthropologists thus proposed an alternative vision of the prehistoric past of humanity,

reversing the frameworks of our present society and giving women reasons to fight against today's patriarchal tyranny. In the beginning was the woman, central, active and dominant. This ancestral political and economic power needs to be retrieved by women today. If some of these arguments might seem too radical, they aimed to restore balance, opening new ways in a scientific field which, under the appearance of objectivity and universality, was in fact totally and absurdly colonized by men.

Prehistoric archaeology has now abandoned these speculations and does not promote any more the magnified figure of the matriarch or the Goddess brought to the fore by the American pioneers of feminism in anthropology in the 1970s [50]; but these critiques have opened new ways to understand the life and existence of a whole half of humanity throughout a very long period of time. In the 1990s, gender research in prehistoric archaeology was no longer dictated by militant purposes, but urged to reconcile demanding archeological research with a more lucid and critical approach [51]. New perspectives were by then made possible by the accumulation of discoveries in palaeo-anthropology as well as in prehistoric archaeology, by developing better excavation techniques, finer study of palaeontological and prehistoric remains through visual technological devices — use of electron microscopes, study of weartraces — and biological experimental techniques such as those derived from molecular biology. Beyond myths sometimes conveyed by radical positions and militant programs, new questions, new perspectives and new debates have opened, and they are now beginning to provide a richer and more complex picture of the place of women in prehistoric cultures and societies. The history of the representations of women in palaeo-anthropology and prehistoric archaeology thus appears as relating not only to the transformations of scientific knowledge but also to the social transformations of our societies: these changing interpretations reflect, to some extent, the change of woman's place within the wider intellectual and social context in which they have been produced, debated and received.

Accounting for the details of human evolution, Darwin put forward the concept of sexual selection, preferring perhaps to give place here to a less brutal process than natural selection. If his demonstration sometimes carried the prejudices of his time regarding gender differences, he was the first who took into account, in his view of evolution, the importance of sexual choices, and who insisted on the evolutionary role women may have played at the dawn of humanity. Thus, he opened the space for a rich reflection which after him was developed in anthropological and palaeo-anthropological studies. Indeed, after him, his works inspired a wide array of orientations taken by reflexions on these issues.

In today's debates, many elaborations go well beyond what Darwin could conceive in his time. Probably because of the limits of his knowledge, Darwin did not take into account major features of women's physiology and of human sexuality such as the concealment of ovulation and the loss of the manifestations of estrus [52–54], which are today an important element in the reflection on “homini- zation”, and appear as major characters in the definition of

human specificity. On another hand, Darwin's “sexual selection” has been the object of intensive discussions during the last decades: referring to Darwin, sociobiologists systematically reduce human social and cultural behavior to reproductive strategies. However we should remember that Darwin himself was reluctant to such generalizations. He saw that many factors limited the role and efficiency of sexual selection in human societies, criticizing in advance these reductionist approaches and speculations that have become current in our time.

References

- [1] C. Darwin, *The descent of man and selection in relation to sex*, in : P.H. Barrett, R.B. Freeman (Eds.), third ed., *The Works of Charles Darwin*, vol. 22, University Press, New York, 1989.
- [2] Charles Darwin's Notebooks, 1836–1844, notebook B CUL-DAR121, Cambridge University Library, Department of Manuscripts and University Archives, <http://darwin-online.org.uk>.
- [3] J. Browne, *Biography of Charles Darwin, Voyaging*, vol. 1, Princeton University Press, Princeton, 1996.
- [4] C. Darwin, *On the Origin of Species*, first ed., 1859, Harvard University Press, Cambridge, MA, 1964 (with an introduction by Ernst Mayr) (facsimile reprint).
- [5] C. Cohen, J.-J. Hublin, *Boucher de Perthes, les Origines Romantiques de la Préhistoire*, Belin, Paris, 1989.
- [6] G. de Mortillet, *Le Préhistorique*, Reinwald, Bibliothèque des sciences, Paris, 1883.
- [7] C. Cohen, *La Femme des Origines. Images de la Femme dans la Préhistoire Occidentale*, Belin-Herscher, Paris, 2003.
- [8] L. Figuier, *L'Homme Primitif*, Hachette, Paris, 1870.
- [9] C. Cohen, *L'Homme des Origines. Savoirs et Fictions en Préhistoire*, Ed. du Seuil, Paris, 1999.
- [10] S. Moser, *Ancestral Images: The Iconography of Human Origins*, University Press, Cornell, 1998.
- [11] H. Delporte, *L'Image de la Femme dans l'Art Préhistorique*, Picard, Paris, 1993 (1979 réed.).
- [12] E. Piette, *La station de Brassempouy et les statuettes de l'âge glyptique*, *Anthropologie* 6 (1895) 129–151.
- [13] H. Breuil, *Quatre Cents Siècles d'Art Pariétal*, Mame, Paris, 1955.
- [14] A. Leroi-Gourhan, *La Préhistoire de l'Art Occidental*, Mazenod, Paris, 1965.
- [15] R.D. Guthrie, *The Nature of Prehistoric Art*, The University of Chicago Press, Williams & Norgate, Chicago, 2006.
- [16] T.-H. Huxley, *Evidences as to Man's Place in Nature*, London, 1863.
- [17] E. Haeckel, *Anthropogenie*, Engelmann, Leipzig, 1874.
- [18] M. Andersson, *Sexual Selection*, Princeton University Press, Princeton, 1994.
- [19] J. Lubbock, *Pre-Historic Times*, Williams and Norgate, London, 1865.
- [20] J. Munro, “More like a work of art than of nature: Darwin, Beauty and Sexual Selection”. In: *Endless Forms*, Charles Darwin (ed), *Natural Science and the Visual Arts*, Yale University Press, 2009, p. 253–291.
- [21] F. Galton, *Essays in Eugenics*, Eugenics Education Society, London, 1909
- [22] S.J. Gould, “Women's Brains” in *The Panda's Thumb*, Norton, New York, 1980, pp. 152–159.
- [23] P. Alland, *Women, Marriage and Politics 1860–1914*, Oxford University Press, Oxford, 1986.
- [24] P. Topinard, *L'Anthropologie*, Reinwald, Paris, 1884.
- [25] C. Darwin, Letter to Caroline Kennard 9 January 1882, in: *DAR 185*, The Darwin Papers, Cambridge University Library, Cambridge (UK).
- [26] G.W. Stocking Jr., *Race, Culture and Evolution, Essays in the History of Anthropology*, Free Press, New York, 1968.
- [27] E. Tylor, *Primitive Culture*, London: H. Murray, 1873–1874 (2 vol.).
- [28] H. Spencer, *System of Synthetic Philosophy, Principles of Sociology*, London: Willliams & Norgate 1874–1896 (3 vol.).
- [29] E.A. Westermarck, *The History of Human Marriage*, Macmillan, London, 1891.
- [30] J.F. McLennan, *Studies in Ancient History Comprising a Reprint of Primitive Marriage: An Inquiry into the Origin of the Form of Capture in Marriage Ceremonies*, Bernhard Quaritch, London, 1876.
- [31] L.H. Morgan, *Ancient Society*, Macmillan, London, 1877.
- [32] S. Freud, *Totem and Taboo*, A.A. Brill, New York, 1918.
- [33] J.-J. Bachofen, *Das Mutterrecht. Eine untersuchung uber die gynaiokratie der alten welt nach ihrer religiosen und rechtlichen natur*, Krais & Hoffmann, Stuttgart, 1861 (reprint B. Schwabe, Basel, 1948).
- [34] F. Boas, *Race*, in : *Language and Culture*, The Macmillan, New York, 1940

- [35] C. Levi-Strauss, *Les Structures Élémentaires de la Parenté*, PUF, Paris, 1949 (Engl. Tr. *The Elementary Structures of Kinship*. Translated by J. Harle Bell, J. Richard von Strummer, R. Needham. Beacon Press, Boston, 1969).
- [36] M. Raphael, *Prehistoric Cave Paintings*, Pantheon Books, Princeton, 1945.
- [37] A. Laming Empeire, *La Signification de l'Art Rupestre Préhistorique, Méthodes et Applications*, Picard, Paris, 1962.
- [38] A. Leroi-Gourhan, *Les Religions de la Préhistoire*, PUF, Paris, 1965.
- [39] E.O. Wilson, *Sociobiology: The New Synthesis*, Harvard University Press, Cambridge, 1975.
- [40] G.F. Miller, *The Mating Mind: How Sexual Choice Shaped the Evolution of Human Nature*, Heinemann, London, 2000.
- [41] R. Dawkins, *The Selfish Gene*, Oxford, Oxford U.P., 1976.
- [42] R. Lee., *Man the Hunter*, in: I. De Vore (Ed.), Aldine, Chicago, 1968.
- [43] S.L. Washburn, C. Lancaster. *The Evolution of Hunting*, in: R.B. Lee (Ed.), *Man the Hunter*, Aldine, Chicago, 1968, pp. 293–303.
- [44] O.C. Lovejoy. *The Origin of Man*, *Science* 211, 341–350.
- [45] D. Barash, J. Lipton, *The Myth of Monogamy – Fidelity and Infidelity in Animals and People*, Henry Holt and Company, New York, 2001.
- [46] M. Landau, *Narratives of Human Evolution*, Yale University Press, New Haven, 1991.
- [47] S. Slocum, *Woman the Gatherer*, in: Rayna Reiter (Ed.), *Toward an Anthropology of Women*, Monthly Review Press, New York, 1974, pp. 36–50.
- [48] A.L. Zihlman, *Misreading Darwin on Reproduction: Reductionism in Evolutionary Theory*, in: F.D. Ginsburg, R. Rapp (Eds.), *Conceiving the New World Order: The Global Politics of Reproduction*, University of California Press, Berkeley, 1995, pp. 425–443.
- [49] N. Tanner, *On Becoming Human*, Cambridge University Press, Cambridge, 1981.
- [50] C. Eller, *The Myth of Matriarchal Prehistory: Why an Invented Past Won't Give Women a Future*, Beacon Press, Boston, 2000.
- [51] M.W. Conkey, J.M. Gero (Eds.), *Engendering Archaeology: Women and Prehistory*, B. Blackwell, Cambridge, MA, 1991.
- [52] A.D. Richard, K.M. Noonan, *Concealment of ovulation, parental care, and human social evolution*, in: N.A. Chagnon, W. Irons (Eds.), *Evolutionary Biology and Human Social Behavior: An Anthropological Perspective*, Duxbury Press, North Scituate, MA, 1979, pp. 436–453.
- [53] A.F. Dixson, *Primate Sexuality Period Comparative Studies of the Prosimians, Monkeys, Apes, and Humans*, Oxford University Press, Oxford, UK, 1998.
- [54] Maurice Godelier, *Les Métamorphoses de la Parenté*, Fayard, Paris, 2004.