

---

DOI:<https://doi.org/10.53555/eijhss.v3i4.61>

---

## INTRASPECIFIC COMPETITION AND NATURAL SELECTION IN *HOMO SAPIENCE SAPIENCE*: A CRITICAL REVIEW

**Nandan Bhattacharya<sup>1\*</sup>**

<sup>1</sup>UGC – Human Resource Development Centre, Jadavpur University, Salt Lake Campus, Block LB, Plot No. 8 Sector – III, Salt Lake City, Kolkata 700 098, West Bengal, India

**\*Corresponding Author:-**

E-mail: [nandan1b@yahoo.co.in](mailto:nandan1b@yahoo.co.in) , [nandanb2012@gmail.com](mailto:nandanb2012@gmail.com) Mobile: 91-9433507577, 91-9064570551;

---

### **Abstract:-**

Great debate and controversy arises regarding the structure and status of human intraspecific competition and natural selection. The analysis of the form of natural selection especially intraspecific competition in human society reveals quite a lot of anomaly. Major differences in relation to the intraspecific competition and natural selection between man and other species in natural world are analysed and human competition is proposed to be completely unique in nature. The uniqueness was found to be occurred with respect to the resource generation, consideration of variation and artificial hindrances to share the natural wealth. The fundamental cause of such departure of man from the other species is suggested to be an outcome of class differentiation and division of labour. The paper intends to review the schools of opinions regarding the said issue and be going to recommend that the only way to bring back Homo sapience sapience under the common rule of natural selection is to eradicate these artificial hindrances or maintain the equality to share the natural resources.

**Key words:** - Darwin, Competition, Variation, Natural selection.

## INTRODUCTION

The battle for survival means the competition among the variations. Natural selection acts upon the variations present within the species community. More suitable (favourable) variations therefore imply more probability to be fit in the struggle for existence. Thus it may not be illogical to state that competition is the basic component through which natural selection operates. Describing struggle for existence Darwin himself stated “...all organic beings are exposed to severe competition” (Darwin 1859: 62).....each species, even where it most abounds, is constantly suffering enormous destruction at some period of its life, from enemies or from competitors for the same place and food; and if these enemies or competitors be in the least degree favoured by any slight change of climate, they will increase in numbers, and, as each area is already fully stocked with inhabitants, the other species will decrease” (Darwin 1859: 69). Thus it is true that natural selection is unavoidable in any circumstances. Human being is nothing more than any other natural animals and hence must be under the control of the same rule of natural selection.

But, here the questions arise regarding the situation of human society. During the course of human evolution a number of developments have taken place which alienated *Homo sapiens sapiens* from the other animals in several respects. The division of labour and cooperation between genetically distant individual created the human society in such a way that it represents a ‘huge anomaly in the animal world’ (Fehr and Fischbacher 2003). This is true for the primitive hunter-gatherer societies as well as modern societies also (Hill 2002, Trivers 1971). On the contrary, most of the animal species exhibit little or no division of labour and cooperation is limited to small groups (Fehr and Fischbacher 2003). Therefore, after Darwin the important and pertinent question repeatedly came up in the mind of philosophers, scientists and sociologists whether natural selection can be equally applicable for the human society or not. Secondly whether the competition in human society is by any means remains ‘natural’.

Two distinct schools of opinions prevail in this regard. There were several attempts to describe the human evolution in the light of Darwinian competition. Even prehistoric period of human evolution was also stated to be based on severe competition. The replacement of Neanderthals by the anatomically modern humans (AMH) was stated by Banks *et. al.* (2008) The idea of violence as a nature of human being or ‘the predatory transition from ape to man’ was stated by Dart (1953) The replacement of one race by another (e.g. modern humans engaged in primeval genocide against peoples who were very similar to themselves and that this points to ingrained, warlike characteristics built into our very nature) was conceptualised by a section of scientists and philosophers. It has been endorsed repeatedly that man possesses the nature of dominance as an inherited feature of their forefathers. Hence it is the basic inherited nature of man to construct the society on the basis of competition leading to inevitable aggression. Ardrey (1967) argued in favour of human origin from the anthropoid background for the single reason only i.e. to be a killer. Therefore, “*The law of competition, be it benign or not, is here; we cannot evade it; no substitutes for it have been found; and while the law may be sometimes hard for the individual, it is best for the race, because it ensures the survival of the fittest in every department*” (Bergman 2009).

On the contrary another school of opinion suggests just the opposite vision. According to them, not competition but cooperation is the building force of human evolution. Darwin’s view was very clear in this regard. Explaining natural selection for the social animals he himself wrote “*In social animals it will adapt the structure of each individual for the benefit of the community; if each in consequence profits by the selected change*” (Darwin 1859: 87). Harman (1994) summarised the cooperation model of our nearest primate neighbors as follows “*Chimps and pygmy chimps are much more sociable than used to be thought. Aggressive confrontations are much less frequent than friendly interactions*”. The sharing and cooperation in relation to food collection and consumption in case of apes are described by Dixson (1981). Scientists like Turnbull (1962) and Lieberman (1991) also made valuable contribution on this matter. On Rodent empathy there are valuable works by Meyza *et.al.* (2017), Sivaselvachandran *et.al.* (2018).

### Why human system is different

Under this backdrop, now, it is time to find out why human system is so different from any other species on earth and whether intraspecific competition in human society is by any perspective natural. But it is better to recapitulate the forms and features of competition before going through the detail. Competition can be classified on different basis. On the basis of the competing species there are two types of competitions any organism has to face viz. Intraspecific (competition with individuals of the same species) and interspecific (competition with individuals of other species). Another important classification of competition is there. It can be of three kinds based on the resource axis viz. competition for food, shelter (territory to be exact) and mate for reproduction.

The present article endeavoured to distinguish the nature of human competition and that of other animals especially with respect to the intraspecific competition. Interspecific competition has not taken into consideration. The reasons behind are of twofold. First intraspecific competition has got more importance by Darwin himself “*But the struggle almost invariably will be most severe between the individuals of the same species, for they frequent the same districts, require the same food, and are exposed to the same dangers*” (Darwin 1859: 75). Secondly the aim of the paper is not to contradict the Darwinian theory of struggle for existence. Rather the aim of this work is just to assess whether the competition of ‘man with man’ in manmade society can be considered natural.

However, it is assumed that competition chiefly depends on the ratio between number of individuals in the system and availability of resources per individual. On the basis of this general feature let us try to explore the issue.

To discover the dissimilarities between any other natural species and man or the anomalies present within human society with regard to intraspecific competition few important aspects should be kept in mind. On the basis of those following features let us discuss the issue.

#### **Resource as a factor:**

Much the per capita resource increases and more the number of individual at the given locality decreases the intraspecific competition tends to be lower. In other animals or plants the situation is simple. Competition exclusively depends there on the number of individuals and resource of nature. In natural system resource must be considered constant as the organisms have to depend only on the natural resources and natural resource is constant. Therefore in nature as the number of individual increases the competition increases also. According to Darwinian principle the prodigality of reproduction thus leads to inevitable competition.

We can formulate this in the following equations,

$$C \propto I \text{ (Equation i)}$$

$$C \propto \frac{1}{R} \text{ (Equation ii)}$$

Where I can be denoted as no. of individual in a given community in given space and time, R denotes the amount of natural resources and C refers to competition.

According to Darwinian principle the prodigality of reproduction thus leads to inevitable competition.

In case of human system resource is by no means a factor as it can be generated. Man is the only creature to create its own resource with the help of labour, technology and intelligence whiles no other animals in earth, both extinct and alive exercise it. So the increase of number of individual must not be a criterion for increase of competition in case of man. On the contrary man can even reduce the competition to a great extent by creating our own resource.

#### **Variation:**

The second major departure exists in relation to the 'variation' (Darwinian variation) among which competition takes place. The success or failure in competition depends on the variation the organism possesses. Here favourable variation means win or vice versa. Subsequently, therefore, 'survival of the fittest' depends solely on the competition among the variations present within the species. But whether humanised version of 'survival of the fittest' as well as competition in human society considered to be biologically justified also is a subject of great debate. In human society, as it is seen, social status and the economic wealth which is the prime factor to survive better is some way or others interpreted as the 'variation'. Therefore the attempt to fit the Darwinian competition among the human individuals for food or shelter in natural selection model is no longer seems to be logical. The same can be applicable with regard to sexual selection too. In case of sexual selection, competition between individuals of other animal species is not equivalent to that of human being. In natural world as Darwin postulates, "*victory will depend not on general vigour, but on having special weapons, confined to the male sex. A hornless stag or spurless cock would have a poor chance of leaving offspring. Sexual selection by always allowing the victor to breed might surely give indomitable courage, length to the spur, and strength to the wing to strike in the spurred leg, as well as the brutal cock-fighter, who knows well that he can improve his breed by careful selection of the best cocks. How low in the scale of nature this law of battle descends, I know not; male alligators have been described as fighting, bellowing, and whirling round, like Indians in a war-dance, for the possession of the females; male salmon have been seen fighting all day long; male stag-beetles often bear wounds from the huge mandibles of other males. The war is, perhaps, severest between the males of polygamous animals, and these seem oftenest provided with special weapons. The males of carnivorous animals are already well armed; though to them and to others, special means of defence may be given through means of sexual selection, as the mane to the lion, the shoulder-pad to the boar, and the hooked jaw to the male salmon; for the shield may be as important for victory, as the sword or spear*" (Darwin 1859: 88). On the contrary in human society the selection of mate depends on money or social status which is not at all analogous to that of the natural weapons like horn or stag etc. of any other species. Moreover in mankind random selection is prevented by artificial selection as we find it in many Eastern societies where parents are selecting the mate for their offspring on the basis of cast, religion, and obviously on the economic position the counter family belongs to. No provision of the bride or the groom is there to comment on this selection. The situation was found in case of the intrafamilial marriage of several human cultures both primitive and even modern age people. This tradition thus has a long historical heritage from the class divided human society of Feudal system and the so called ultramodern capitalist society could not (not want to!) destroy the legacy of the old vice. As a result a strange paradox prevails in our society with every technological brilliance on outer self but in inner self carrying the foul smell of previous era.

This subject, any way is an issue of another discussion and not directly relevant to the present one. However, to come to the conclusion of this issue let us site the view of Allchin (2009),

*"..... Socialized version of 'survival of the fittest' is biologically flawed. Adaptation to local environmental conditions as progress, or improvement, on some imagined scale of abstract value cannot be analog. Political power and economic class are by no means biological traits. Social stratification is not the result of differential survival, or differential reproduction, even metaphorically. Privileged variants are not genetically based. Nor is it even clear what is selected. Moreover, humans actively shape the environment. Social "selection" is an indirect amalgam of human choices. In the casual social analogy, therefore, neither the heritable units, nor the sources of variation, nor the units of selection, nor selection itself fit Darwinian patterns. Natural selection does not map onto social politics".*

### **Opportunity and scope to share natural resources:**

The third reason of disagreement lies in the opportunity and scope to share natural resources. Each and every individual in nature has the equal right to share the natural wealth. Only suitable anatomical, physiological variations which must be genetic vis-à-vis natural are the only decisive factors to have better resources for survival and those variations are subjected to be under scanner of the natural selection to regulate and monitor. True natural competition and selection can exist only when the artificial hindrances to share the natural resources is not present. In human society the case is different. Looking back to the history we find that the fundamental difference which creates the division in mankind is the class difference. At the dawn of civilization the right of possession for wealth and consequently competition for it was thus the prime cause behind the deviation of human system. It can thus be defensible to infer that the deviation of human society appears to be an imposed phenomenon where competition and aggressiveness are of greater value. The condition during the prehistoric age of human development explains the fact. Analyzing the human historic development Engels rightly pointed out this. “.....It is the greatness, but also the limitation, of the gentile constitution that it has no place for ruler and ruled. Within the tribe there is as yet no difference between rights and duties; the question whether participation in public affairs, in blood revenge or atonement, is a right or a duty, does not exist for the Indian; it would seem to him just as absurd as the question whether it was a right or a duty to sleep, eat, or hunt. A division of the tribe or of the gens into different classes was equally impossible” (Engels 1884). He again pointed out “The cultivated land still remained tribal property; at first it was allotted to the gens, later by the gens to the household communities and finally to individuals for use. The users may have had certain rights of possession, but nothing more” (Engels 1884). “This gentile constitution is wonderful in all its childlike simplicity. Everything runs smoothly without soldiers, gendarmes or police; without nobles, kings, governors, prefects or judges; without prisons, without trials. All quarrels and disputes are settled by the whole body of those concerned... still, not a bit of our extensive and complicated machinery of administration is required. There can be no poor and needy--the communistic household and the gens know their responsibility towards the aged, the sick and those disabled in war. All are free and equal, including the women. There is as yet no room for slaves nor, as a rule, for the subjugation of alien tribes... This is what mankind and human society were like before class divisions arose. (Engels 1884). Same has been accepted by Gellner (1991) as “hunter/gatherers... defined by the fact that they possess little or no means of producing, accumulating or storing wealth', in societies 'characterised by a low degree of division of labour’”. This has also expressed by Lee (1991) “Before the rise of the state and the entrenchment of social inequality, people lived in for millennia in small scale kin based social groups, in which the core institutions of economic life included collective or common ownership of land and resources, generalised reciprocity in the distribution of food, and relatively egalitarian political relations’”. He further justified that individual members enjoyed a level of autonomy infinitely greater than the mass of people in class societies not accompanied by selfishness. On the contrary, the stress was on generosity, helping each other. Food was never consumed alone by a family: it was always shared out among members of a living group. Each member of the camp received an equitable share. This principle of generalised reciprocity has been reported of hunter-gatherers in every continent and in every kind of environment. Even today the Mbuti Pygmies of the Congo was reported having no ‘chief’ and solving any problem in their society by collaborative manner still today. They don’t rely on personal authority (Turnbull 1962). Therefore, it was the division of labour and class relationship which have created the departure of human social behaviour from the other social animals. Gradually all the other categorizations (cast, religion, racial or ethnic conflicts even political dominance etc.) took place as an inevitable consequence of this fundamental economic milieu.

### **But why competition got so much importance?**

If the intraspecific competition in human society is considered to be a misinterpretation of Darwin then the question should be solved why this matter got so much importance among a section of scientists and philosophers and secondly is there any motive behind the endorsement and encouragement to use Darwin as a tool for any hidden idea. The explanation remains in political and economic perspective. In fact rising capitalism found their philosophical patron in Darwin’s idea. Morris and Morris (1996) pointed out that ruthless capitalism that flourished in the late 1800s and early 1900s took Darwinian competition as their brand theory. Gertrude Himmelfarb (1962) noted that Darwinism may have been accepted in England in part because it justified the greed of certain people. According to Rachels (1990 cf. Bergman 2009) the survival of the fittest theory in biology was quickly interpreted by capitalists as an “ethical precept that sanctioned ruthless economic competition’”. According to Huxley and Kettlewell (1965) Social Darwinism was being used as a tool leading to the glorification of *laissez-faire* economics and war, and subsequently to an unscientific eugenics and racism, and eventually to Hitler and Nazi ideology’. Darwinism was used in a defense of competitive individualism and its economic corollary of *laissez-faire* capitalism in America also.

It is thus worthy to infer that more and more importance to competition especially intraspecific competition was ascertained later to patronise a particular economic pattern of human society, a so called free market economy. The need of competition was essential for the capitalist economy to grow and flourish. For example Blake *et. al.* (1966) attempted to apply modern Darwinism to business. But the role of such imposed and unnatural competition was understood several decades ago by Marx (1848). To explain the life status of the labourers he opined in Communist manifesto as “With its birth begins its struggle with the bourgeoisie. At first, the contest is carried on by individual laborers, then by the work of people of a factory, then by the operative of one trade, in one locality, against the individual bourgeois who directly exploits them. They direct their attacks not against the bourgeois condition of production, but against the instruments of production themselves; they destroy imported wares that compete with their labor, they smash to pieces machinery, they set factories ablaze, they seek to restore by force the vanished status of the workman of the Middle Ages. At this stage,

*the laborers still form an incoherent mass scattered over the whole country, and broken up by their mutual competition*". With this unrest society develops leading to even war at last. The discourse of the ruthless villainy played by capitalism was pointed out by Einstein also (Einstein, 1949) Therefore putting competition in the central axis of society formation and evolution is nothing but an intentional wrong interpretation of natural laws or to be specific Darwinism.

### **Dominance: Some misconceptions:**

At the same time we can come to another conclusion that the conflict of human society lies exclusively in the claim for supremacy. Only in case of human society the 'artificial' deception of larger part of the population ('haves-nots') by fewer wealth and power having section ('haves') is noticed. The dominance takes place in the name of money in case of present imperialistic society or religion, cast, hierarchy in relation with official status, (even in so-called democratic structure also) in different places or different part of the society whichever is applicable.

But we should keep in mind that the very word 'Dominance' on the basis of which the argument in favour of competition as well as the hierarchy of human society stands is proved to be a great misnomer with wrong interpretation. So far the genetics is concerned dominance have several misconceptions summarised by Allchin (2005) as, a dominant trait is 'stronger' and 'overpowers' the recessive trait. A dominant trait is more likely to be inherited. A dominant trait is more 'fit' in terms of natural selection. A dominant trait is more prevalent in the population. 'Wild type' traits are inherently dominant, while mutants are recessive. Male or masculine traits are dominant. In decision making contexts, equal voice or shared authority become 'unnatural.'

But for Mendel, dominance was not the exclusive norm (Falk 2001). Indeed, he may have deliberately narrowed his focus to traits he could confidently sort dichotomously as dominant and recessive (Di Trocchio, 1991). As early as 1907, however, C.C. Hurst noted that incomplete dominance was twice as prevalent as complete dominance (Darden 1991: 68). A survey indicates that less than one-third of human clinical genetic conditions follow the dominant recessive pattern (Rodgers 1991). Codominance (e.g. ABO blood group) would be the best example to justify the presence of all variation alongwith in nature. Thus the conception of Genetic Domonance should no longer be used to describe the human version of dominance.

### **Conclusion:**

The deviation of *Homo sapience sapience* from the other species in the globe, both living and extinct was an inevitable outcome of the so called human civilization. Out of many rules of nature violated by man during the course of their cultural evolution. 'Intraspecific competition' and 'natural selection' are the major breaches. Natural or to be specific Darwinian competition has been contravened chiefly after the division of labour in human society. This artificial impediment to share the natural resources is particularly responsible for the violation and as a consequence the departure from the natural laws. Therefore, until such artificial compartmentalisations in human society are eradicated the natural selection cannot operate in proper. Thus it can be concluded that human competition is not a natural kind of competition and natural selection as stated and analysed by Darwin is not remained natural at all in mankind.

### **References:**

- [1]. Darwin C. On the origin of species *London, UK: John Murray; 1859: 62.*
- [2]. Darwin C. On the origin of species *London, UK: John Murray; 1859: 69.*
- [3]. Fehr E and Fischbacher U. The nature of human altruism. *Nature 2003; 425: 785-791.*
- [4]. Hill K. Altruistic cooperation during foraging by the Ache, and the evolved human predisposition to cooperate. *Hum. Nat. 2002; 13: 105-128.*
- [5]. Trivers RL. Evolution of reciprocal altruism. *Q. Rev. Biol. 1971; 46: 35-57.*
- [6]. Fehr E and Fischbacher U. The nature of human altruism. *Nature 2003; 425: 785-791.*
- [7]. Banks W, Francesco D, Peterson AT, Kageyama M, Adriana S, Sánchez and Goñi MF. Neanderthal Extinction by Competitive Exclusion. *PLoS ONE 2008; 3(12): 1-8.*
- [8]. Dart RA. The Predatory Transition from Ape to Man. *International Anthropological and Linguistic Review 1953; 1(4): 201-217.*
- [9]. Ardrey R. *African Genesis: A Personal Investigation into the Animal Origins and Nature of Man.* New York: Atheneum; 1961: 20.
- [10]. Bergman J. Darwin's influence on ruthless laissez faire capitalism. *Institute for Creation Research.* (2009) URL: [www.icr.org/article/454/](http://www.icr.org/article/454/) (accessed 12.07.2018).
- [11]. Darwin C. On the origin of species *London, UK: John Murray 1859; 87.*
- [12]. Harman C. Engels and the origins of human society, Issue 65 of *International Socialism Journal* Published <http://pubs.socialistreviewindex.org.uk/isj65/harman.htm> (Winter 1994) (Accessed 02.09.2014).
- [13]. Dixson AF. *The Natural History of the Gorilla* Weidenfield and Nicolson, London; 1981
- [14]. Turnbull C. *The Forest People.* Simon and Schuster, New York; 1962
- [15]. Lieberman P. *Uniquely Human. The Evolution of Speech, Thought and Selfless Behavior.* Harvard University Press, Cambridge, Massachusetts; 1991: 210.
- [16]. Meyza KZ, Bartal IB., Monfils MH, Panksepp JB., Knapska E. The roots of empathy: Through the lens of rodent models. *Neuroscience and Biobehavioral Reviews.* 2017; 76: 216-234

- [17]. Sivaselvachandran S., Aclanda EL., Abdallaha S., Martina LJ. Behavioral and mechanistic insight into rodent empathy. *Neuroscience and Biobehavioral Reviews*. 2018; 91: 130–137
- [18]. Darwin C. *On the origin of species* London, UK: John Murray; 1859: 85.
- [19]. Darwin C. *On the origin of species* London, UK: John Murray; 1859: 88.
- [20]. Allchin D. The dilemma of dominance. *Biology and Philosophy*. 2005; 20: 427–451. DOI: 10.1007/s10539-005-2561-z
- [21]. Engels F. *The Origin of the Family, Private Property and the State* (translated by Alick West) <http://www.marxists.org/archive/marx/works/1884/origin-family/index.htm>; 1884 (accessed 02.02.2010)
- [22]. Gellner E. *Plough, Sword and Book*. The University of Chicago Press, London; 1988: 16.
- [23]. Lee RB. *The!Kung San: Men, Women, and Work in a Foraging Society*. Cambridge: Cambridge University Press; 1979
- [24]. Morris H. and John D. Morris. *The Modern Creation Trilogy. vol. 3. Society and Creation*. Green Forrest, AR: Master Books; 1996.
- [25]. Himmelfarb G. *Darwin and the Darwinian Revolution*. *New York: W.W. Norton*; 1962.
- [26]. Rachels J. *Created from Animals: The Moral Implications of Darwinism*. Oxford University Press, New York; 1990.
- [27]. Huxley J. and Kittlewell HBD. *Charles Darwin and His World*. Viking Press' New York; 1965: 81.
- [28]. Blake R., Warren A. and Jane M. *Corporate Darwinism*. *Houston, TX: Gulf Pub.*; 1966.
- [29]. Marx K. and Engels F. *Manifesto of the Communist Party*. Foreign Languages Press, Peking; 1970
- [30]. Einstein A. *Why Socialism?* *Monthly Review*. May 1949
- [31]. Falk R. The rise and fall of dominance. *Biol. Philos.* 2001; 16: 285–323.
- [32]. Di Trocchio F. Mendel's experiments: A reinterpretation. *J. Hist. Biol.* 1991; 24(3): 485– 519.
- [33]. Darden L. *Theory Change in Science: Strategies from Mendelian Genetics*. Oxford University Press, Oxford; 1991.
- [34]. Rodgers J. Mechanisms Mendel never knew. *Mosaic*. 1991; 22(3): 2–11.