

# Darwin's Theory of Evolution

## Part IV: Consequences for Sociology

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*This is the final instalment of the serialized article on Darwin's theory of evolution, published on the occasion of the 150th year of the publication of "Origin of Species".*

THE ARENA of greatest misapplication of Darwin's theory is sociology. A whole branch of a subject has come into being with the title Social-Darwinism or socio-biology. The protagonists of this subject demand that since man is also ultimately an animal, he is subject to the same biological laws as the animals (and also the plants). Since the animal world is subject to the laws of evolution like struggle for existence, and survival of the fittest, man also as a species cannot escape from these iron rules. On the other hand, like other animals, all characters of man, including his so-called intellectual faculties, intelligence, talent, specialized skills, are rooted in the genetic resources inherited by a man. Although this line of thinking (characterized as *biological determinism*) of a restricted group of scientists is opposed by the larger body of biologists, it is widely propagated through popular literature and media, and confuses the common people. So it needs a special attention here.

Moreover, Darwin has been charged with blindly but wrongly copying Malthusianism in his theory, whereas Engels has been accused of opposing details of Darwin's theory of evolution for putting the Malthus-question against Darwinism. These ques-

tions also need be discussed.

Although all these questions are related to one another, for the sake of better clarity, we shall discuss them issue by issue.

### **Struggle for Existence**

In the third part of our discussion, we learnt that long before the emergence of modern man, some species of the genus *Homo* had taken to the course of bio-cultural evolution. With the onset of bio-cultural mode of existence, the primitive man slowly became dissociated from the strictly animal way of life. It had many aspects, out of which we shall take upon here only one point to show its importance, namely, the question of food chain.

Except man all animals and plants are bound to nature with an invisible chain, and a very stout one. Every species has a very specific basket of diet in a specific niche, without which its members cannot live and thrive; and beyond which it cannot go. Paddy is a tropical plant which requires a somewhat hot climate and lot of water. Wheat is a crop that grows in a temperate weather and on a low rain-fed soil. Change the respective niches and there will be no rice and no wheat. Woodpeckers live in the woody trees with alcoves in which insects set their lodging, and are the main diet of the bird. If big trees are denuded from a zone, woodpeckers would face the fate of

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extinction. Elephants are coming out of the forest range into localities and destroying crops. Why? Because they do not get the food they are habituated to consume in the forest. Our urbanization programme is costing their livelihood and snapping their food chain. If we do not take special measures and attention for them, the elephants and many such animals as well as plants will be eliminated for ever from the face of the earth. In nature certain long term changes are always taking place whereby a large number of species are going to lose their natural food and proceeding to extinction. Current environmental problems have added new dimensions to this process.

Man broke from this chain not only by extending his dietary choice, but and more so by producing his diet from the available materials in all geo-climatic zones of the earth. In the wake of this extension man also modified his method of adaptation. Adaptation by physical and physiological means acquired through genetic mechanisms increasingly yielded place to adaptation through socialization, which enabled him to work upon nature and create external means of sustenance like stone tools and cave dwellings, fire, skin covers for body and bedding, etc. Although not always successful, and more often brutally crushed by natural forces, against which he was for long a helpless creature, man gradually changed nature and himself together. And this change came much faster than biological adaptation. Whereas for nearly three million years primitive man passed in the Palaeolithic Era, and merely ten thousands of years ago he ushered in the Neolithic Revolution, it required only six thousand years for him to enter into the metal age.

Yes! Man is also subject to the struggle for existence. But it is no longer a biological struggle, although biological functions

are there in man too. Man had to struggle against natural forces and wild animals in the early stages; the struggle is still on. The difference is that storms and cyclones, lightning and flood play less havoc; lions and tigers cannot pose much danger to man. But there are viruses, bacteria, fungi and other micro-organisms with which man have still to fight. In all cases the struggle is a social and collective struggle since the ancient times. Every benefit secured by one section of mankind tends at the same time to accrue to the rest –through acculturation, trade and commerce, conquest, charity, or whatever else. Man's struggle for food and shelter, procreation and child rearing, livelihood and security, is also a social-economic-political struggle totally different from the biological struggles of plants and animals. Lastly, large scale battles among groups of men for rights, power, wealth and territory are also, to be precise, nothing akin to intra-species struggle. Here too there are definite and organized social groups who take sides and participate in the strife in common; clans and tribes in the ancient times, classes and nations in the civilized societies. No individual fights his case alone. None of these cases can be described or understood as the Darwinian struggle for existence. Even when we note the cases of personal grudge or envy or even physical conflict, that is also born of the social discriminations or conscious desire to get more than one has got. In the non-human world an animal fights for food and kills other animals only when and as long as it is hungry. Here, on the contrary, a hungry man may not fight for quenching his hunger; and a fully satiated man may try by hook or crook to grab others' dishes.

#### **Survival of the Fittest**

As regards the idea of survival of the fittest, let us note that this is not a necessary part

of the theory (at least we did not include it at the place where we discussed the theory and that with perhaps no loss of truth value of our presentation). Darwin also did not deal with it in the first four editions of his book. The idea came from the pen of Herbert Spencer who in his *Principles of Biology*, Volume I (1864), included a chapter on Social Selection about human society, and there he introduced this idea for man as a synonym for Natural Selection. Darwin adopted the phrase from there and inserted it in the fifth edition of his book (1869) \*.

Since then attempts were afoot to transfer this idea back to society. The name of Darwin being associated with it offers some prestige to this phrase. Various people invoke the name of Darwinism to serve their vicious motivations. For example, in justification of his design to bring the world under his boots, Hitler said: "If we did not respect the law of nature, imposing our will by the right of the stronger, a day would come when the wild animals would again devour us—then the insects would eat the wild animals, and finally nothing would exist upon the earth except the microbes. .... By means of the struggle the elites are continually renewed. The law of selection justifies this incessant struggle by allowing the survival of the fittest."<sup>1</sup> The famous US business magnate Rockefeller spoke at a Sunday school address: "The growth of a large business is merely a *survival of the fittest*. .... The American Beauty rose can

be produced in the splendour and fragrance which bring cheer to its beholders only by sacrificing the early buds which grow up around it. This is not an evil tendency. .... It is merely the working out of a law of nature and a law of God."<sup>2</sup>

Does natural selection mean survival of the fittest?

The readers, first of all, should note two things. First, the idea is not so appropriate even for the general living beings. It is not a fact that among the contending members of different species in a confined area only the *strongest* or the *fittest* member and species survive and all the others die out. No, this is far from the fact. The environment in a limited space also provides many divergent types of niches with diverse resources for the plants and animals. That is why in spite of stiff competition between and within species population, quite a large number of types survives and thrives in an area. The correct idea may therefore be put as *survival of the fit*, which, a careful reader may note, involves a logical fallacy of tautology (circularity of argument). Moreover, put this way this idea does not satisfy those who want to seek a justification for the maxim 'might is right'.

Still the implicit expression has its use in evolutionary biology in the form of Darwinian fitness implying the degree of adaptability as a differential probability of reproductive success of a population.<sup>3</sup> But, here the second point enters, is man's life and existence explicable in terms of Darwinian fitness? Whereas the cat or the dog has to change itself in order to fit with the available niches, man largely changes external nature and creates his own niche—as much as possible. There is a limit to the possibility no doubt. But it is also true that with every passing generation man is extending these limits by his cultural activities. Moreover, man also changes him-

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\*This idea of survival of the fittest as a scientific parlance had at the time become so popular that even Karl Marx had used in a light vein a synonymous phrase *survival of the strongest* in his magnum opus *Capital*, Vol. I, (1867) in connection with the workers' struggle for existence, even before Darwin; and the phrase remained as it is till the last edition supervised by Engels in 1890. [See Karl Marx – *Capital*, Vol. I, Progress Publishers, Moscow; n.d., p. 256; reproduced from the first English edition supervised by Engels in 1887 and updated according to the fourth German edition published by him in 1890]

self while changing the external nature; but this change is not like the way the cat or dog changes. Man acquires increasingly more cultural abilities, intelligence, knowledge, art, science, technology, and so on. What the dog-mom learns in her life time in order to fit with the given situation, she cannot pass on to her progeny. The puppies in every next generation have to learn the things by themselves *ab initio*. In contrast, what man learns in one generation he can pass on to the next generation simply through the cultural media, by setting examples, training, languages, mythology, dances, rituals, oral and written texts, formal education, and so forth. Thus the fitness man requires and acquires for survival is of a completely different nature and his degree of fitness continually increases through every generation.

That is why much of man's life cannot be described in terms of biological struggles and Darwinian fitness. Socrates was killed in the ancient Greek society; Bruno was burnt on the stake by Roman Catholic Church. Are these instances of failures of these men in their struggle for existence? Or of survival of the fittest? Religious preachers came in human society—Buddha, Christ, Muhammad, and others. They had taught millions of men across different countries, languages, cultures and traditions to organize them into united wholes. People learnt to live and fight and even sacrifice themselves for others under their banners. How can we explain these phenomena in terms of struggles for existence?

When religion lost its moral basis and sided with the feudal royal and evangelical powers, man sought a new ideology in bourgeois humanism and democratic values at the time of Renaissance. And in the colonial countries nationalist leaders imbued the people with the ideal of patri-

otism to fight for their country's independence. The British colonialists might have described their occupation of India as survival of the fittest; could the Indians accept it? When Khudiram or Bhagat Singh went to the gallows, could any sane person describe their sacrifices as failures in the struggle for existence? And their execution by the British rulers as survival of the fittest? To quote a critic of socio-biology: "All those who in their martyrdom witness to their conviction that survival can sometimes be too dearly bought do not thereby rebel against Nature's law of self-preservation. Rather they demonstrate that no such law obtains; or, at any rate, if it does, the human animal does not fall within its scope."<sup>4</sup>

E. O. Wilson, a renowned entomologist in the USA specializing in the insect instinct and social behaviour, who launched the socio-biology movement in the 1970s, wrote: "[Human] culture, aside from its involvement with language, which is truly unique, differs from animal tradition only in degree."<sup>5</sup> He held that human social behaviours are under genetic control. Differences between male and female humans in terms of social involvements and capacities accrue from their respective genetic composition. But what he put aside as "aside" is the most important characteristic of man and differentiates him from all other animals not only in a vast measure of magnitude but with a yawning gap of quality. A critic rightly took exception to this casual and unscientific way of expression "involvement with language" for if we disregard everything else, language alone may account for the ever widening gap of man from the rest of the animal world.<sup>6</sup>

Wilson hoped that "sociology and the other social sciences, as well as the humanities, are the last branches of biology waiting to be included in the Modern

Synthesis".<sup>7</sup> He also aspired to show economics as a special branch of biology. According to him, "The members of human society sometimes cooperate closely in insectan fashion, but more frequently they compete for the limited resources allocated to their role sector. The best and the most entrepreneurial of the role-actors usually gain a disproportionate share of the rewards."<sup>8</sup> By a comparison with the group life cycle of the ants, he found biological justification for slavery in human society (chapter 27).

It is clear from these utterances that these people do not distinguish between what is animal and what is truly human and between what is biological and what is social. The Sociobiology Study Group of Science for the People based in the USA strongly reacted to the claims of Wilson. Arguing against this rectilinear biodeterminism the Group dispensed "with the direct evidence for a genetic basis of various human social forms in a single word "None". "There is no evidence that meets the elementary requirements of experimental design, that such traits as xenophobia, religion, ethics, social dominance, hierarchy formation, slavemaking, etc., are in any way coded specifically in the genes of human beings."<sup>9</sup> In fact, let alone social behaviours, certain biological behaviours of man are also not genetically programmed. A human baby born with two normal legs does not automatically learn to sit, stand and walk like man, unless aided by extra-personal assistance.

As the Marxist psychologist, and an educator of the physically handicapped in the young socialist Soviet Union, L. S. Vygotsky pointed out, the entire process of development of the human child into adulthood is a socially mediated, interpersonal and interactive programme, which also includes the simultaneous development of the individual

mind. "The internalization of socially rooted and historically developed activities is the distinguishing feature of human psychology, the basis of the qualitative leap from animal to human psychology."<sup>10</sup> The point is important inasmuch as the potentiality of human mind, which is a special behavioural function of the *individual* brain, is actualized only *in* and *through* society. It may not have been a mere coincidence that three authorities residing in three distant corners of the earth in three different time periods have defined the uniqueness of human mental development at three different levels, almost in identical ideography.

- (a) For Delgado, from the neuro-physiological point of view, mind is "intra-cerebral elaboration of extra-cerebral information"<sup>11</sup>;
- (b) For Vygotsky, at the psychological level, mind is interiorization of external communication relations<sup>12</sup>; \*
- (c) For Ghosh, in the sociological context, individual thinking is nothing but "personification of social thinking"<sup>13</sup>.

These three approaches from three different authorities in widely diverging fields of observations, however, synchronize on one point, namely, the socialized nature of

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\*It may be interesting to read more of what Vygotsky wrote on this in his own words: "[W]e may say that we become ourselves through others. ... The [human] personality becomes for itself what it is in itself through what it is for others. This is the process of making of the personality. ... All the higher mental functions are interiorized relations of a social order, the basis of the social structure of the personality." In continuation of a comment by Marx that the human essence is nothing but an ensemble of social relations he inferred that "man's psychological nature is a totality of social relations which have been transferred within and have become functions of the personality and forms of its structure." [Vygotsky - "Development of the Higher Mental Functions" in Leontyev et al - Psychological Research in the USSR; Progress Publishers, Moscow; 1966, pp. 43-45]

human personality and mentality. Hence there can be no discussion of human sociality without relating it with his mentality. It is nothing strange when we see socio-biologists avoid this discussion in order to obviate the distinction of man from animals. Waddington was absolutely right when he pointed as the “weakest feature in the whole grand structure” of Wilson’s book to the fact that “in a book of 700 large pages about social behaviour there is no explicit mention whatever of mentality”.<sup>14</sup>

### The Malthus Question

The relation between Darwin’s theory and Malthusian competition for limited resources has been widely misconstrued. Even Engels had to defend Darwin against unfounded criticisms of Dühring over this question. The latter held that Darwin borrowed from Malthus his theory of human population growth to apply on the plant and animal populations in the form of struggle for existence, which is a semi-poetic barbarity implanted on man.<sup>15</sup>

However, the criticism did not stop in the nineteenth century. Even in 1921 a man as enlightened as George Bernard Shaw saw in Darwin’s theory a horrible prospect for mankind, for “when its whole significance dawns on you, your heart sinks into a heap of sand within you. There is a hideous fatalism about it, a ghastly and damnable reduction of beauty and intelligence, of strength and purpose, of honour and aspiration, to such casually picturesque changes as an avalanche may make in a mountain landscape, or a railway accident in a human figure. To call this Natural Selection is a blasphemy, possible to many for whom Nature is nothing but a casual aggregation of inert and dead matter, but eternally impossible to the spirits and souls of the righteous. If it be no blasphemy, but a truth of science, then

the stars of heaven, the showers and dew, the winter and summer, the fire and heat, the mountains and hills, may no longer be called to exalt the Lord with us by praise: their work is to modify all things by blindly starving and murdering everything that is not lucky enough to survive in the universal struggle for hogwash.”<sup>16</sup> The implicit assumption in the entire criticism is that Darwin applied the Malthusian theory on man as such.

Actually, Darwin (as well as Wallace) borrowed from Malthus only an idea about bio-population dynamics. What Malthus proposed for man (regarding much higher birth rate compared to the available resources), Darwin and Wallace applied on the plants and animals. Although Malthus’ population theory as a whole was wrong (for its wrong mathematical treatment) and its inference inapplicable to man, its general contention was partially correct for the rest of the biological world. For every species, the birth of progeny almost always exceed the number the available resources can sustain. This leads to an intense competition among them for the necessary share of those resources to survive. Success in any competition involves differential abilities, which in the field of biology is defined in terms of differential fitness.

After this is spelt out in the open, it appears to be a trite, a statement about an obvious fact, and Darwin seems to have *naively* acknowledged his debt for it to Malthus. No! It was a *very* important clue to Darwin (and just as much to Wallace) to resolve a serious problem he had been facing: how did the members of a species in a locality remain more or less constant in spite of their offspring being born in large number? We must remember that Darwin had then no valid theory for biological population (the Verlhurst’s equation of 1838 was not known to the world till 1920s).<sup>17</sup> In

this sense Darwin swooped down Malthus to the proper place he belonged to. In point of fact, Engels also had to defend Darwin on this score. So when he accused the latter of “naivety” for “uncritical” acceptance of Malthus, it was more an expression of his strong feelings against the reactionary ideas of Malthus than a justified criticism of Darwin’s approach.

In this connection let us note that Engels or Marx, so to say, had nothing against the application of Malthus’ theory about plants and animals even after its use by Darwin. On the contrary, in a letter to Lange in 1865, Engels turned this application into an argument against the capitalist system: “I too was struck, the very first time I read Darwin, with the remarkable likeness between his account of plant and animal life and the Malthusian theory. Only I came to a different conclusion from yours: namely, that nothing discredits modern bourgeois development so much as the fact that it has not yet succeeded in getting beyond the economic forms of the animal world.”<sup>18</sup>

Moreover, people who criticize Darwin on the Malthus question often forget the fact that Darwin had already expressed a reverse reservation about its applicability on man: “It is the doctrine of Malthus applied with manifold force to the whole animal and vegetative kingdoms; for in this case there can be no artificial increase of food, and no prudential restraint from marriage.”<sup>19</sup> If we appropriately translate this negative assertion into its positive image, it runs like this: *The Malthusian doctrine is far less applicable in the case of man, where there is some likelihood of artificial increase of food, as well as of prudential birth control.* As a matter of fact, this statement has been obscured from the prevailing readings of Darwin—perhaps a sheer ignorance by the academia, and more probably a design by the forces with vested interests. For the lat-

ter, Darwin may be spared to be criticized, even if wrongly; but Malthus must be held in high esteem for his reactionary apologetic ideology.

### **Genes of Intelligence (?)**

In the discussion over evolutionary biology and heredity of man, one often confronts a very common confusion, whether man’s talents and intelligence are also hereditary qualities. To give it a more scientific tone sometimes it is couched in the genetic vocabulary, namely, as if there were genes of intelligence, talents and specialized skills. Some popular science writers and journalists go to the length of claiming that there are genes in man for aggression, violence, love, sexuality, and so forth. Moreover, in support of this genetic transmission, they sometimes highlight some chosen examples: a son of Einstein was a renowned physicist; a daughter of Marie Curie was a Nobel Laureate, and so on.

Not only this. Certain far-flung conclusions are drawn from this omnipotence of genes for hereditary quality transmission; for examples: (a) inequality of intelligence between white and non-white races; (b) genetic differences of capability between the rich and the poor; (c) gender-specific gradations in performances of man and woman; etc. In a word, all the class, racial and gender inequalities are sought to be justified with reference to the science of biology. In the extreme case, even rape is sought to be justified as the natural sexual attributes of man and woman.<sup>20</sup>

Are these true?

Let us examine the cases one by one.

As we have already seen, genetic programme involves physical characters. This is true for the entire living world including man. The height, skin colour, eye shape, hair texture and colour, etc., in a word, all the features of general human morphol-

ogy and anatomy, which specify the human species as a whole with all its ethnographic varieties, are determined by the respective genes and alleles. Similarly, all the physiological functions of a man follow the species-specific genetically determined programme. Just as the normal mode of an elephant's eating a tree-branch is by holding it with the help of the trunk, or that of a bird's consuming its diet with its beak, similarly the normal mode of a man's eating foods is by holding and picking them with the help of the hands. Each of these cases is strictly determined by the genes concerned of the species.

As soon as we enter the arena of sociology and psychology, specific only to man, we leave the playground of the genes behind. There is no sociality of any other species, not even the so-called social insects. The group life of insects like ants and bees, are called *social* by a projected image of human society. But whereas human society is characterized by active and creative interactions, continuous change of forms and organization, and sometimes by radical upheaval, any insectan collective life is characterized by its constancy of forms, organizations and functional specificity of the members for the entire span of existence of the species. Hence the functions of every member of the insects in a group may be understood in terms of genetic determination quite well and rightly. It is on the contrary impossible to interpret social behaviour of man in terms of genetic programme, if for no other reason, only for that it changes from society to society, form to form, and time to time. For genes it is not possible to switch over from one function to another so quickly; neither is it possible for the gene themselves to change and mutate altogether within a short period.

Moreover, human social behaviour also involves human consciousness, desire,

motivation, decision, choice, initiative, ideology, morality, values, purposes, indoctrination—which may be brought together under a single title, human mentality, the subject matter of human psychology. In his mental functions, every man presents a unique case, which therefore cannot be mapped onto any sort of a corresponding genetic programme, always specific to a population. No matrix of nature-nurture or genotype-phenotype intercourse proves applicable to sort out the mental and cultural functions of a man. It utterly fails to explain why, living in the same time in history, Shakespeare had chosen the literary life and Galileo the scientific pursuit. Phylogeny and Ontogeny stand equally flabbergasted to explain why British people tolerated a titular king in their firmly established democracy and the French uprooted monarchy by tooth and branch through a revolution. So on and so forth.

Or, alternatively, if one seriously thinks up genes for all these kinds of social functions and human phenomena, one would have to look for trillions and trillions of constantly mutating genes. Again, this would render the search itself meaningless.

As regards inheritance of intelligence by genetic sharing, it is quite ridiculous to cite some isolated instances. It is necessary to elicit a long line of similar inheritance, both backward and forward in time, to clinch the issue. If the line breaks off after one or two cases upward and/or downward, it proves nothing. Einstein's son became a physicist because he inherited the physics-gene from his father? All right! Then go backward in time and try to locate wherefrom Einstein inherited the gene. From his carpenter father? Why did he not inherit the carpenter's gene? Irene Curie inherited genes for scientific talent from her parents? Then ask who Marie Curie got the

genes from? And who gave Pierre his scientific gene? Also ask why Eve Curie did not inherit the gene for science like her sister from her parents. Coming to our country and taking a different instance, let us verify: If Munabbar Ali Khan, the son of Bade Ghulam Ali Khan, displayed a similar talent in Hindusthani classical music as his father, is it inherited through genes? Isn't it rather a case of cultural inheritance, of absorbing the inputs of musical interest received at home from his early boyhood? For every pro-example, thus, there are some scores of contrary cases. Point-blank questions like these demystify the prevailing confusions at a single stroke. These things have been theoretically clarified by a group of biologists in several interesting books.<sup>21</sup>

Are the whites more intelligent than the blacks? The Europeans more than the Asians? Men more than women? Some people devised a whole array of tests called the Intelligence Quotient (IQ) Tests to determine the differences in performances between these cultural groups. And when they got positive differences between these groups, they declared it to be a genetically determined fact. They published research work on this hereditary difference.

In fact, even if there are some fixed patterns of inter-group differences, the explanation is mostly cultural-environmental and hardly genetic. Since, in general, the whites enjoy better living conditions and have recourse to greater amount of societal advantages than the blacks, the Europeans than the Asians and Africans, and the men compared to the women, the performances in the tests produce the stereotyped skewness they show.<sup>22</sup> With improvement in these conditions and equalization in the opportunities made available to all of them, their performance levels may tend to differ by a minimum, statistically insignificant, magnitude. Most of the serious at-

tempts to show genetic basis in the transmission of hereditary intelligence has been found to be either wrongly interpreted or partial data-based or even fraudulent. Recall the case of Cyril Burt in England who was knighted for his most extensive studies on twin children and was later discovered to have faked several important assortments of data.

I may refer to two important personages who in their prime time, in terms of the IQ standard, would have shown the least possibility of achieving the heights they rose to.

Take the case of Darwin first. In accordance with his family tradition, following the trails of his grandfather and father he should have chosen the profession of a physician. But this he abhorred with all his heart. Mr. Robert Darwin, a hardcore atheist, then advised him to get a degree in Theology to be a priest in a parish church. He thought (quite loudly at that) Charles would be a "disgrace" to their family. Had the IQ tests been devised at that time (in fact, one of Charles' cousin brothers, Francis Galton, was then already on the way to formulating the theory of hereditary intelligence factor), Charles might then hardly score 100 marks.

Then consider Einstein. If we could consult the mathematics teacher of his school in 1895 about his future prospects, the teacher would surely express grave doubts and say, "What can he do in science with so poor a level in mathematics?" And just ten years after that same student displayed a mathematical intuition that brought about a radical transformation in our conception of the physical world.

How much would the IQ assessment, if made in their cases, be successful?

We may approach the problem from another angle. Language and culture, through which man inherits intellectual products from his previous generations (which, ob-

viously, include not only his own family line but also many other social links, and which therefore leaves the line of genetic inheritance behind), are not genetically programmed phenomena. The anatomical structure and physiological mechanism for acquiring language capacities and cultural habits are surely genetically determined, human-specific affairs. But what language (and languages) a man will learn, speak and use, what culture he will carry, what new qualities he will learn and introduce, etc., are totally socially mediated and culturally acquired phenomena. There are no genes for Tamil or Russian; neither any for being a musician or a ruffian. Those who argue in favour of a genetic basis of cultural traits, are either confused about what they say and deal with, or consciously muddle things to confuse others.

### **Guard against Scientific Pranks**

Readers of Darwinian Theory of evolution today must be on guard against all these trends. For those who enjoy the special privileges of a class-divided society are always anxious to justify their status in terms of some higher and more acceptable norms. Earlier they could invoke the religious authority and God to preach: "The rich man at his table, the poor man at his gate, /God made them high and lowly, and ordered their estate." Now people would ridicule at such exhortations. Astrology, fate, parrots, amulets, metal tablets, godmen's magic, etc. are also not that much effective. So they need more "scientific" verbiages. Genetic determinism, IQ-ism, survival of the fittest and the like serve them with the necessary propaganda tools. Once class, ethnic or gender differences be shown to be genetically decided and biologically natural, exploitation and coercion become the ineluctable laws of nature. All the misapplication of the Darwinian tenets, genetics,

etc. or the defence of Malthusian theory and the rise of socio-biology—are nothing but current formula of the apologists for the exploitative society. And the mass media tycoons the world over ensure that only the afore-criticized falsehoods reach the people through popular literature and journals and other channels; and the true theories and truthful writings may not find so easy an access to the media and market.

To show that Darwin would have been the last person to preach hardly anything even remotely supportive of the existing discriminations of the present society, it is worth while to recall one of his statements against slavery soon after his return from the worldwide marine journey: "It is often attempted to palliate slavery by comparing the state of slaves with our poorer countrymen: if the misery of our poor be caused not by the laws of nature, but by our institutions, great is our sin; but how this bears on slavery, I cannot see; as well might the use of the thumb-screw be defended in one land, by showing that men in another land suffered from some dreadful disease. Those who look tenderly at the slave owner, and with a cold heart at the slave, never seem to put themselves into the position of the latter; what a cheerless prospect, with not even a hope of change! Picture to yourself the chance, ever hanging over you, of your wife and your little children—those objects which nature urges even the slave to call his own—being torn from you and sold like beasts to the first bidder! And these deeds are done and palliated by men, who profess to love their neighbours as themselves, who believe in God, and pray that His Will be done on earth! It makes one's blood boil, yet heart tremble, to think that we Englishmen and our American descendants, with their boastful cry of liberty, have been and are so guilty!"<sup>23</sup>

Rarer are the men who can say to pos-

terity, like Darwin, for himself “I have acted rightly and steadily following and devoting my life to Science. I feel no remorse from having committed any sin, but have often and often regretted that I have not done direct good to my fellow creatures.”<sup>24</sup>

## References

1. Quoted by H. R. Trevor-Roper (ed.) – *Hitler's Table Talk*; Weidenfeld and Nicolson, London; 1953, pp. 39 and 51
2. Cited by Anthony Flew – *Darwinian Revolution*; Paladin Books, London; 1984, pp. 125
3. Elliot Sober – *The Nature of Selection*; The MIT Press, Massachusetts, 1985, pp. 31-47 and 61-63
4. Anthony Flew – “From Is to Ought”; in Arthur L. Caplan (ed.) – *The Sociobiology Debate*; Harper and Row, New York; 1978, p. 144
5. E. O. Wilson – *Sociobiology: The New Synthesis*; Harvard University Press; 1975, p. 168
6. Marshall D. Sahlins – “The Use and Abuse of Biology”; in Arthur L. Caplan (ed.) – *op. cit.*, p. 427
7. E. O. Wilson – *op. cit.*, p. 4
8. *Ibid.*, p. 554
9. Sociobiology Study Group of Science for the People – “Sociobiology – Another Biological Determinism”, in *BioScience* 26, No. 3 (March 1976)
10. L. S. Vygotsky – *Mind in Society*; (edited by M. Cole, V. John-Steiner, S. Scribner and E. Souberman); Harvard University Press, London; 1978, p. 57
11. J. M. R. Delgado – *Physical Control of the Mind*; Harper and Row, New York; 1965, p. 27
12. Vygotsky – “Development of the Higher Mental Functions”; in A. Leontyev, A. Luriya and A. Smirnov (eds.) – *Psychological Research in the USSR*; Progress Publishers, Moscow; 1966, p. 45
13. Shibdas Ghosh – “Cultural Movement in India and Our Tasks”, in *Selected Works*, Vol. 2; SUCI Publications, Kolkata; 1992, p. 287
14. C. H. Waddington – “Mindless Societies”, in *New York Review*, 7 August 1975 (Book Review)
15. Engels – *Anti-Dühring*, Foreign Languages Press, Peking; 1976, pp. 84-86 [Insert the German u with two dots above]
16. George Bernard Shaw, “Preface”, *Back to Methuselah: A Metabiological Pentateuch*; Constable and Co., London; 1921, p. xl
17. See for details: Ashoke Mukhopadhyay – “Malthus' Population Theory: An Irony in the Annals of Science”; *Breakthrough*, Vol. 10, No. 2 (November 2003)
18. Engels' Letter to F. A Lange dated 29 March 1865, in Marx & Engels – *Correspondence 1846-95*; National Book Agency, Calcutta; 1947, p. 175. *Engels later developed this comment into a two-edged banter against both Malthus and capitalist system: “Darwin did not know what a bitter satire he wrote on mankind, and especially on his countrymen, when he showed that free competition, the struggle for existence, which the economists celebrate as the highest historical achievement, is the normal; state of the animal kingdom.”* [Engels – *Dialectics of Nature*; Progress Publishers, Moscow; 1974, p. 35]
19. Charles Darwin – *On the Origin of Species*; Collins' Clear Type Press, London; 1922, p. 81
20. *For apologia of these arguments see:* (a) Randy Thornhill & Craig Palmer – *A Natural History of Rape: biological bases of sexual coercion*; MIT Press; 2000; (b) Cheryl Brown Travis (ed.) – *Evolution, Gender and Rape*; MIT Press; 2003; (c) Arthur Jensen – *Genetics and Education*; Harper and Row, New York; 1972; (d) Richard Herrnstein and Charles Murray – *The Bell Curve*; New York; 1992. *For critiques of these arguments see:* (a) Russell Jacoby and Naomi Glauberman – *The Bell Curve Debate*; Times Books, New York; 1995; (b) Jonathan Kaplan – *The Limits and Lies of Human Genetic Research*; Routledge, London; 2000; (c) Lenny Moss – *What Genes Can't Do*; MIT Press; 2002; (d) John Dupre [Use French e with a ref] – *Darwin's Legacy*; Oxford University Press, London; 2003
21. R. C. Lewontin, Steven Rose and Leon J. Kamin et al. – *Not in Our Gene: Biology, Ideology and Human Nature*; Patheon Books, New York, 1984
22. Phillip E. Vernon – *Intelligence and Cultural Environment*; Methuen and Co., London; 1969; *see especially the Chapters VI-XIII, where the authors discussed “the factors influencing the mental development of the children”.*
23. Charles Darwin – *The Voyage of the Beagle*; John Murray, London; 1839, p. 433-34; *also see* Adrian Desmond and James Moore – *Darwin's Sacred Cause: Race, Slavery and the Quest for Human Origins*; Allen Lane, London; 2009
24. Quoted by Francis Darwin (ed.) – *The Autobiography of Charles Darwin and Selected Letters*; Dover, New York; 1958, p. 348

- Darwin's Theory of Evolution is the widely held notion that all life is related and has descended from a common ancestor: the birds and the bananas, the fishes and the flowers -- all related. Darwin's general theory presumes the development of life from non-life and stresses a purely naturalistic (undirected) "descent with modification". That is, complex creatures evolve from more simplistic ancestors naturally over time. In a nutshell, as random genetic mutations occur within an organism's genetic code, the beneficial mutations are preserved because they aid survival -- a process known as "natural selection". The four main ideas of Darwin's evolutionary theory are variability in populations, overproduction of offspring, competition for resources and inheritance of traits. Variation provides advantages to some members of a population. The surviving individuals pass their traits to the next generation. English Naturalist Charles Darwin used his keen observation skills and logic to develop a comprehensive theory that describes the process of evolution. While some controversy surrounds evolution as it applies to human populations, Darwin's theory applies to all organic species. The basic principles of evolution are simple and seem obvious to the modern reader. However, prior to Darwin, no scientist had put all the pieces together. TL;DR (Too Long; Didn't Read). The name of Charles Darwin and his theory of natural selection are inexorably attached to evolution and, together with the mechanisms of genetics, form the basis of the modern theory of evolution. record account for the lack of transitional forms. These assertions set the stage for the next part of the theory, why life evolves: the number of individuals increases at a geometric rate; populations of organisms tend to remain the same size because the resources are limited, and only the fittest survive; the survivors are variable, and those that survive reproduce, perpetuating the favorable traits. Darwin's Theory of Evolution. Do you ever wonder why some birds are big like ostriches and some birds are small like robins? Or why a lion has a mane while a leopard has spots? Four of Darwin's finch species from the Galápagos Islands. The birds came from the same finch ancestor. They evolved as they adapted to different food resources on different islands. The first bird uses its large beak to crack open and eat large seeds. Bird #3 is able to pull small seeds out of small spaces. In his diary, Darwin pointed out how each animal is well-suited for its particular environment. The shapes of the finch beaks on each island were well-matched with the seeds available on that island, but not the seeds on other islands.