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Revealing the uncertainty of Evolution of *Homo sapiens* from the group of Apes

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Abstract

It has been a subject of debate that how primates/apes evolved into Homo sapiens, but interestingly there is a 'common ancestor' of all great 'Apes'. This 'common ancestor' not only evolved into the most advanced ape: - 'Homo sapiens' but also evolved into the 'advanced apes' (Chimpanzee, Gorilla, and Orangutan). The evolutionary paradigm of human evolution is often explained by 'evolutionary biologist' as an outcome of Darwinian concept of Natural Selection. According to Darwin's concept the fittest organism survives which is popularly known as "Survival of the Fittest". So if human evolution is a function of Natural Selection then the complexity needs critical determination that how come all the species that evolved from the common ancestors at the same time still survives? Hence as Darwin's concept of natural selection doesn't support the phenomenal condition we do say "Charles Darwin Needs Revision", we can predict that all the primates that have developed from the common ancestor are fit for survival in the present condition. Hence the complexion uncertainty that needs attention is to solve the mystery which leads to the evolution and survival of all the different form of the primates and categorically selecting them as members of varying advanced groups. The anomaly can be explained by the logic of mutation and application of the theory of Gregorian (Mendellian)-Morganian genetics. To solve the complexity a theoretical-genetics approach has been discussed in this paper is justified, proposing Sinha-Tripathy modification of Darwin's theory of Natural Selection.

Keywords: Complexity, complexion cncertainty, theoretical-genetics, natural selection, gregorian (mendellian)-morganian genetics, mutation.

Introduction

Evolution as a progress – the inexorable improvement to more complex, more intelligent life – has always been a seductive notion. The notion of progress as a driving ethos of nature and society – has been a characteristic of western philosophy, but not all intellectual thought[1]. Some species later in evolutionary time are clearly more complex in certain ways than many found earlier in time[2]. This development can however be explained simply as the ratchet effect – the fact that evolution builds on what existed before. For the most part the world has become a strikingly more complex place biologically as a whole. First in seeking to explain human origins, paleonthropology is apparently faced with a sequence of events through time that transformed apes into humans. The description of such a sequence falls naturally into narrative form. Second the subject of that transformation in ourselves. Being egotistical creatures we tend to find stories about ourselves more interesting than stories about, for instance the behavior of arthropods or the origin of flowering plants.

Evolutionary Distance of Apes

During the past hundred plus years, the issue of our relations to the apes has gone full circle. From the time of Darwin, Huxley and Haeckel until soon after the turn of the twentieth century, humans' closest relatives were regarded as being the African Apes, the chimpanzee and gorilla, with the Asian Great Ape, the Orangutan, being considered to be somewhat separate[1-4]. From the 1920s until the 1960s, humans were distanced from the great Apes, which were said to be an evolutionary closely knit group. Since the 1960s however conventional wisdom has returned to its Darwin's cast .refer figure-1.

The shift of opinions has , incidentally , been paralleled by a related shift in ideas on the location of the 'cradle' of 'mankind' Darwin plumbed for Africa , because that's where our closest relatives, the chimpanzees and gorilla live; Asia became popular in the early decades of the twentieth century ; and Africa has once again emerged at the locus[5]. While this human/African ape wheel has gone through one complete revolution, the question of the humanness of the hominine lineage has been changing as well[5].

Revealing the Evolutionary Complexity in *Homo sapiens*

The query is often asked in the way that how primates/apes evolved into *Homo sapiens*, but the interesting fact is that there is a 'common ancestor' of all great 'Apes'[6-8]. This 'common

ancestor' not only evolved into the most advanced ape: '*Homo sapiens*' but also evolved into the 'advanced apes' (Chimpanzee, Gorilla, and Orangutan). The evolutionary paradigm of human evolution is often explained by 'evolutionary biologist' as an outcome of Darwinian concept of Natural Selection. On the contrary according to Darwin's concept the fittest organism survives which is popularly known as "Survival of the Fittest". So if human evolution is a function of Natural Selection then the complexity arise that how come all the species that evolved from the common ancestors at the same time still survives?

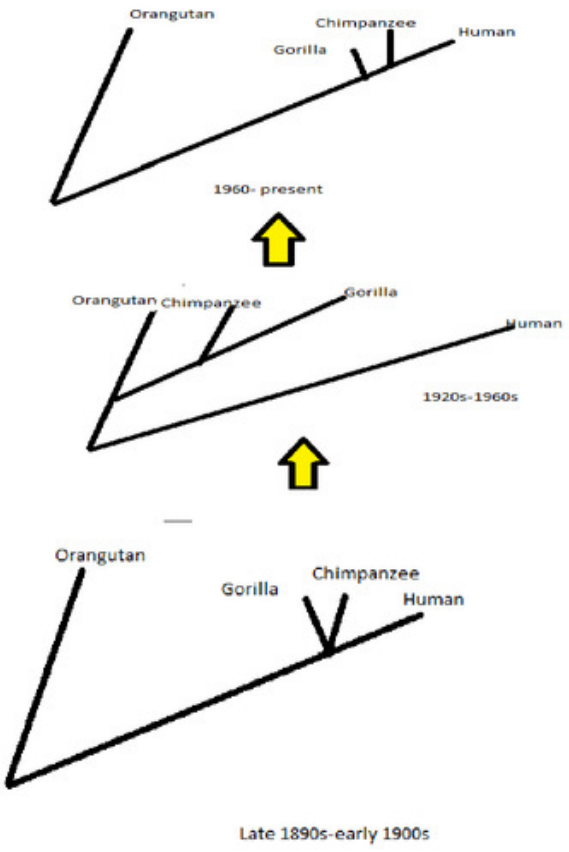

Figure-1
Shifting Patterns: Between the beginning of the twentieth century and today, ideas about the relationships among apes and humans have moved full circle

Hence as Darwin's concept of natural selection doesn't support the phenomenal condition, we can predict that all the primates that have developed from the common ancestor are fit for survival in the present envio-bio-geographical condition. Hence the complexion uncertainty that needs attention is to solve the mystery which leads to the evolution of a section from the common ancestor into a most advanced form (*Homo sapiens*). The anomaly can be explained by the logic of mutation and application of the theory of Gregorian (Mendellian)-Morganian genetics.

On the basis of molecular, genetical, mathematical[5-10] and anthropological studies we have seen that the closest species to the *Homo sapiens* is the 'chimpanzee, gorilla, orangutan' respectively. Due to the unstable and changeable environment any sort mutation could have occurred in the genome of the common ancestors[10]. These common ancestors which were subjected to the mutation carried on the mutated trait to the next generation through reproduction. The new offspring thus formed bear this traits in its genome complex, the mutated gene coded for the amino acids which led to the phenomenal development of the grey cells. As their brain developed they were able to understand the oncoming threats and how to prevent themselves. They were able to recognize that if they adapt to the feature of bipedalism they could easily have a wide view of the perimeter and could see a wide area, they could easily show them different and huge which would help them to overpower their enemies. Combining the above two incidence the ape has become both intelligent and bipedal. It now has adapted using its legs for walking and its hands to eat as it made their work easier.

Natural Evolution Vs Natural Selection: de-novo reasoning of Evolution

Following the gestures of the philosophical transactions delivered by Einstein (Nobel Laureate, Physics, 1923) at the convention on 'Science of mind and the independence of spirit' in Berlin declaration (1919), as a part of the Tagore-Einstein (T-E) debate, we present a statement arguing the co- relational existence of natural selection and evolution.

Statement: Evolution as a unity is dependent on natural selection, and the evolution as a reality is independent of natural selection.

Explanation: The statement proposed is a projection about dualistic approach of subjective and objective vector of reality. According to our view, the universal reality and truth is not subjective and relative i.e. cannot be related to observer's status or consciousness. In reality the objective tends to change at occurrence of random events in respect to time deferential over an infinitesimal limit. Hence the subjective and objective study cannot be precisely carried out at the same time as per Heisenberg's Uncertainty principle. Thus the object and subject can never interact to depict the picture of reality.

Imposing the 'Law of Excluded Middle': an entity could either be subject or object, not both (considering a particular time interval). Hence, this delineates our analysis that reality and truth are absolute and objective functions, i.e. void of observer's rank or psyche.

Definition: The subjective of evolution is the objective to change over the time.

Hence to study evolution we have to determine the subjective and objective loci of Natural Evolution. It is not feasible to study both the loci at the same time as mentioned earlier referring the Heisenberg's principle of uncertainty. Viewing from a fixed reference the evolution is defined in a fixed interval where it can also be a function of natural selection at certain arbitrary points in a metric space. Similarly when viewing from a moving reference frame evolution cannot be defined within a definite boundary limit as the upper limit is variable i.e. time is varying along with unpredictable dimensional space. Hence as objective is changing with respect to time and space it is not showing dependency on any particular function. The universe is changeable i.e. universe is evolving but evolution as a function of natural selection is prevalent at certain subjective conditions therefore in reality evolution is independent of natural selection.

An Approach towards solving the Uncertainty paradigm of evolution in hominins using the logic of Random Selection on the concept of Mendellian-Morganian Genetics

The core of common ancestor's social life is a female with her offspring; these units are often found by themselves but Sometimes link up with other females and their offspring [11]. Each female maintains a core area, which usually overlaps with that of one or more other females. Instead, a group of males defends the community range against the males of neighboring communities [10, 11]. Mating in common ancestor's communities is promiscuous, with each estrus female copulating with several males. The social organization is therefore known as multimate polygyny. Key features of common ancestor's social organization is that, unlike in the general pattern of multimate societies among primates, males remain in their natal group while young adult females transfer (or are sometimes kidnapped) to other communities.

On studying the social and mating behavior of the Apes we have discovered that 'multi-mate' polygyny is seen in common ancestor's community. Hence there is exclusive and high probability of reproducing multivariate species.

Hence we have deduced a theoretical decision of "Randomly Selecting" the possible common ancestral species, performing genetical crosses between each and every species and following the result for the first three generations (the result obtained shows stability as we proceed after second generation) using Mendellian-Morganian concept.

Let us consider: We have theoretically sampled from the phase when the species has obtained both intelligence and bipedalism.

XX chromosome signifies wild type female common ancestor. XY chromosome signifies wild type male common ancestor. 'i' is the trait for intelligence. 'b' is the trait for bipedalism.

F_1 Generation

Cross between Wild type non-intelligent female ape and mutated Intelligent male ape

	X^{ib}	Y
X	XX^{ib}(carrier female)	XY(wild male)
X	XX^{ib}(carrier female)	XY(wild male)

Outcome: 50% wild type male, 50% carrier female.

Cross between Mutated intelligent female ape and Wild type non-intelligent male ape.

	X	Y
X^{ib}	XX^{ib}(carrier female)	$X^{ib}Y$(intelligent male)
X^{ib}	XX^{ib}(carrier female)	$X^{ib}Y$(intelligent male)

Outcome: 50% intelligent male, 50% carrier female.

Cross between Mutated intelligent male and Mutated intelligent female.

	X^{ib}	Y
X^{ib}	$X^{ib}X^{ib}$(intelligent female)	$X^{ib}Y$(intelligent male)
X^{ib}	$X^{ib}X^{ib}$(intelligent female)	$X^{ib}Y$(intelligent male)

Outcome: 100% intelligent species.

Cross between Wild type male and Wild type female

	X	Y
X	XX	XY
X	XX	XY

Outcome: 50% Wild type male, 50% Wild type female.

Possible outcomes after the first generation: Wild Type Male: XY, Carrier Female: XX^{ib} , Intelligent Male: X^{ib} Y, Intelligent Female: $X^{ib}X^{ib}$, Wild Type Female: XX

F_2 Generation

Cross between Wild type non-intelligent male ape and Carrier female ape.

	X	Y
X^{ib}	X^{ib}X(carrier female)	$X^{ib}Y$(intelligent male)
X	XX(wild type female)	XY(wild type male)

Outcome: 25% wild type male, 25% carrier female, 25% wild type female, 25% intelligent male.

Cross between intelligent female ape and Wild type non-intelligent male ape.

	X	Y
X^{ib}	XX^{ib}(carrier female)	$X^{ib}Y$(intelligent male)
X^{ib}	XX^{ib}(carrier female)	$X^{ib}Y$(intelligent male)

Outcome: 50% intelligent male, 50% carrier female.

Cross between Wild type male and Wild type female

	X	Y
X	XX(wild type female)	XY(wild type male)
X	XX(wild type female)	XY(wild type male)

Outcome: 50% Wild type male, 50% Wild type female.

Cross between intelligent male and carrier female.

	X^{ib}	Y
X	XX^{ib}(carrier female)	XY(wild male)
X^{ib}	$X^{ib}X^{ib}$(intelligent female)	$X^{ib}Y$(intelligent male)

Outcome: 25% wild type male, 25% carrier female, 25% intelligent female, 25% intelligent male.

Cross between Mutated intelligent male and Mutated intelligent female.

	X^{ib}	Y
X^{ib}	$X^{ib}X^{ib}$(intelligent female)	$X^{ib}Y$(intelligent male)
X^{ib}	$X^{ib}X^{ib}$(intelligent female)	$X^{ib}Y$(intelligent male)

Outcome: 50% intelligent female and 50% intelligent male.

Cross between Wild type non-intelligent female ape and mutated Intelligent male ape

	X^{ib}	Y
X	XX^{ib}(carrier female)	XY(wild type male)
X	XX^{ib}(carrier female)	XY(wild type male)

Outcome: 50% wild type male, 50% carrier female.

Possible outcomes after the second generation: Wild Type Male: XY Carrier Female: XX^{ib} Intelligent Male: X^{ib} Y Intelligent Female: $X^{ib}X^{ib}$ Wild Type Female: XX

F_3 Generation

Cross between Wild type non-intelligent male ape and Carrier female ape

	X	Y
X^{ib}	X^{ib}X(carrier female)	$X^{ib}Y$(intelligent male)
X	XX(wild type female)	XY(wild type male)

Outcome: 25% wild type male, 25% carrier female, 25% wild type female, 25% intelligent male.

Cross between intelligent female ape and Wild type non-intelligent male ape.

	X	Y
X^{ib}	XX^{ib}(carrier female)	$X^{ib}Y$(intelligent male)
X^{ib}	XX^{ib}(carrier female)	$X^{ib}Y$(intelligent male)

Outcome: 50% intelligent male, 50% carrier female.

Cross between Wild type male and Wild type female

	X	Y
X	XX(wild type female)	XY(wild type male)
X	XX(wild type female)	XY(wild type male)

Outcome: 50% Wild type male, 50% Wild type female.

Cross between intelligent male and carrier female.

	X^{ib}	Y
X	XX^{ib}(carrier female)	XY(wild type male)
X^{ib}	$X^{ib}X^{ib}$(intelligent female)	$X^{ib}Y$(intelligent male)

Outcome: 25% wild type male, 25% carrier female, 25% intelligent female, 25% intelligent male.

Cross between Mutated intelligent male and Mutated intelligent female.

	X^{ib}	Y
X^{ib}	$X^{ib}X^{ib}$(intelligent female)	$X^{ib}Y$(intelligent male)
X^{ib}	$X^{ib}X^{ib}$(intelligent female)	$X^{ib}Y$(intelligent male)

Outcome: 50% intelligent female and 50% intelligent male.

Cross between Wild type non-intelligent female ape and mutated Intelligent male ape

	X^{ib}	Y
X	XX^{ib}(carrier female)	XY(wild type male)
X	XX^{ib}(carrier female)	XY(wild type male)

Outcome: 50% wild type male, 50% carrier female.

Possible outcomes after the third generation: Wild Type Male: XY, Carrier Female: XX^{ib} , Intelligent Male: X^{ib} , Intelligent Female: $X^{ib}X^{ib}$, Wild Type Female: XX

Results and Discussion

If we continue to the fourth generation we will obtain the same offspring as in second and third generations. Hence we can thus predict that the evolution has thus tends to stability and no drastic change would take any further. Let us consider any one generation from F_2 or F_3 We have made six crosses that means a summation of 600% of the offspring is obtained Hence; $\sum$ Intelligent Offspring= 225% $\sum$ Wild Type Offspring= 225% $\sum$ Carrier Offspring= 150%. The result thus obtained is very much similar to the present condition. The percentage in respect of population of Intelligent Offspring (*Homo sapiens*) is greater than the population of the Carrier Offspring (other advanced apes). Also from the theoretical model we do obtain a major section of the common ancestor offspring but in nature we do not get the ancestral species, so we can say or infer that they have perished over time[14]. Unless and until the present envio-bio-geographical condition is susceptible to any further drastic change in context to chemical, physical, biological phenomenon, the present condition is considered to be stable and hence the result obtained is highly unlikely to change in the near future. In present condition it is seen that the population of the other advanced apes is highly outnumbered in contrast to the population of the *Homo sapiens*. Thus this real world scenario is very much similar to the bio-mathematical paradigm proposed in the paper. The paradigm depicts a theoretical integrated intelligent- time-machine model which helps us to view the actual cause that is the architect of human evolution and its presiding nature over the population of the Apes

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Conclusion

The proceedings in this paper are solely guided by one assumption and that is: We have assumed that the changeable and unstable environmental conditions increases the disorderness in the system which plays a key role in inducing mutation in the gene of the primates which has lead to the great evolutionary phenomenon. From the proceeding of the paper and on analyzing the results obtained we see that we are

obtaining three types of species 1. Intelligent (most advanced) Types 2. Carrier (other advanced) Types-3. Wild (common ancestral) Type. From the calculations we get a very realistic picture that depicts the present scenario and that is the most advanced species outnumbers the other advanced species. A contradiction arises with the result of the presence of the common ancestral species of the most advanced and advanced apes. But as we do not find the presence of the common ancestral species at the present time so we can infer that the particular species have perished due to natural selection. So how do we contradict natural selection to be the governing phenomenon in ape evolution?

We shall conclude the paper with presenting sufficient logic to support our argument and which will answer the question. The logics presented are based on the view presented.

Natural Selection can act on any heritable phenotype that is, trait and selective pressure can be produced by any aspect of the environment, including sexual selection and competition with members of the same or other species. Natural Selection often results in the maintenance of the status quo by eliminating less fit variants. Hence the concept of fitness is central to Natural Selection. In broad terms, individuals that are more fit have better potential for survival, as in the well known phrase 'survival of the fittest'. Thus by studying the results from the bio-theoretical model we can easily point out that evolution of the apes to its advanced and most advanced form is in many ways subjectively similar to the phenomenon which is globally acknowledged as 'Natural Selection' but objectively it is not similar to what we call as 'Natural Selection'. From the results we have seen that after the F_3 generation still the carrier/advanced apes are present in the population and has not got eliminated. This is a prime factor that contradicts Natural Selection because already a more advanced form has also evolved at the same time, hence if this phenomenon is to be an outcome of Natural Selection then it is obvious that the most advanced type shall have the only survival, which has not been the scenario in reality. Studying the present development we cannot say that the most advanced ape is much fitter than the advanced ape. Interestingly, genetically the most advanced ape is fitter than the advanced ape but Natural Selection has not played a role in their existence, they are not naturally selected. In the result we have also confronted a contradictory result of the presence of a major section of wild type/common ancestral apes, which is not the case in reality, as we have not found the existence of such common ancestral spp. Hence, we say the elimination is an outcome of Natural Selection.

From the discussion to summarize and conclude briefly, if we study the particular phenomenon from a subjective point of view we obtain the outcome as a factor of Natural Selection at a certain part (selection of the advanced and most advanced apes from the common ancestral apes.), but if we again view the entire process from an objective point of view we infer it to be Natural Evolution in reality (Natural Selection has not been into play to select the most advanced apes from the advanced apes, on the contrary both of the gene pools are vibrantly present till today, even though the most advanced ape is genetically fitter than the advanced ape they are not naturally selected.). Therefore our argument precisely explains and delineates our proposed logic behind contradicting Natural Selection as the governing factor of Hominin evolution. The theoretical model presented by us depicts a close co relational membership value with the present and real geo-scenario; hence our logic is well proved. Darwin have had mentioned in his theory of evolution that nature supports survival of the advantageous species over the less advantageous/disadvantageous species (concept of Natural Selection: Survival of the Fittest), but from present paper proceeding it is clear and proved that "Nature doesn't have to always select the best/advantageous/fittest species it can select the species which is fittest along with the species sharing varying degree of fitness" and that is what we propose to be Sinha-Tripathy modification of Darwin's theory of Natural Selection. Hence; we do say "Charles Darwin Needs Revision."

It is highly unlikely that the general framework we have portrayed for human evolution will change in the near future. The uncertainty that has been encountered at the beginning of the paper is solely answered. The prolonged hypothesis that Natural selection is the architect of human evolution has also been defended in this paper. The complexity analysis of hominine evolution that has been discussed in this paper in details provides an insight to the relativity of evolution caused by mutation.

The paper communicates further research scopes on the concept of evolutionary relativity and as from the crossing results we have seen that the recessiveness is found only in the female species but in nature the male also confronts recessiveness. Little work however has been done in standardizing the protocol for explaining and representing the male recessive paradigm in Mendellian-Morganian genetic concept. Research and development of such paradigm needs attention.

References

1. Lewin R., Human Evolution : An Illustrated Introduction. BlackwellPublishing: Blackwell Publishing Ltd. **(1984)**

2. Majumder DD., Cybernetics and general systems—A unitary science, *Kybernetes*, **8,** 7–15 **(1979)**

3. Dawkins R, Meet my cousin, the chimpanzee, *New Scientist*, **138,** 36–38, **(1993)**

4. Dawkins R, Good strategy or evolutionarily stable strategy, In Barlow, G.W. and Silverberg, J. Sociobiology : Beyond Nature/Nurture? Colorado : Westview Press, 331–337, **(1980)**

5. Darwin C., The Origin of Species, **(1872)**

6. Haldane J.B.S., A mathematical theory of natural and artificial selection, Part 111. Proc. Cambridge Phil. Soc,

23, 363-372, **(1926)**

7. Haldane J.B.S., Theoretical genetics of autopolyploids., *J. Genet.,* 22, 359-372 **(1930)**

8. Haldane, J.B.S, The relation between density regulation and natural selection, *Proc. Roy. Soc B,* **145,** 306-308, **(1956)**

9. Fisher R.A, The Genetical theory of Natural Selection. Oxford: Clarendon Press, **(1930)**

10. Dawkins R., Evolutionary biology. The eye in a twinkling, *Nature,* 368 (6473), 690–691, **(1994)**

11. Dawkins R, The Selfish Gene, Oxford: Oxford University Press, **(1976)**

12. Alles D.L. and Stevenson J.C, Teaching Human Evolution., *The American Biology Teacher,* **65(5),** 333-339, **(2003)**

13. Haldane J.B.S, A mathematical theory of natural and artificial selection, Part IX. Proc. Cambridge Phil. Soc, **28,** 244-248, **(1932)**

14. Lieberman D.E, Homing in on early *Homo*. Nature, 449, 291-292, **(2007)**

15. Majumder DD, The Quest for a science of mind consciousness and reality, **(2013)**

16. Majumder DD and Roy PK, Cancer self-remission and tumor instability: A cybernetic analysis: Toward a fresh paradigm for cancer treatment, *Kybernetes,* 29,.896–927, **(2000)**

17. Zeuner F.F, The Pleistocene Period. London: Ray Society Monograph, **(1945)**

18. Dawkins R., The Extended Phenotype. Oxford : Oxford University Press., **(1982)**

19. Dawkins R, The Ancestor's Tale, Boston: Houghton Mifflin, **(2004)**

20. Fisher R.A, The Evolution of Dominance, Biol. Rev. 6, 345-368, **(1931)**

21. The website of the US National Center for Biotechnology Information (NCBI): www. ncbi. nlm. nih. gov/ About/primer/phylo.html., **(2014)**

22. http://users.rcn.com/jkimball.ma.ultranet/BiologyPages/T/ Taxonomy.html#PhylogeneticTrees., **(2014)**