

Re: Nei's "new mutation theory" resurrects William Bateson

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On Dec 18, 12:56 pm, d...@xxxxxxxxxxxxxxxxxxxxxxxxxxxxx (DK) wrote:

An appeal to authority in place of the valid argument.
Which is surprising because 1) Behe's position is impossibly weak and can be dealt with properly, 2) Dawkins knows and can do much better (but apparently can't resist cheap shots).

Cheap shots, indeed. I directed you to the documentary evidence in Stoltzfus (2006) which you did not read. I will provide some quotations from the MS architects below. Unfortunately, your statement above reflects an unwillingness to accept evidence— Dawkins says "X" but you interpret this to mean "not X" on the grounds, that in spite of what he *actually wrote*, you are confident that he "knows better".

Of course the rate of evolution depends on the rate of mutations!
Had anyone seriously suggested that it's not?

Yes, they have, and that's exactly the point that I am making, and that Dawkins was making. I only quoted Dawkins because he faithfully reflects the MS position documented in statements such as the following:

"The large number of variants arising in each generation by mutation represents only a small fraction of the total amount of genetic variability present in natural populations.... It follows that rates of evolution are not likely to be closely correlated with rates of mutation. Besides mutation, natural selection and migration help maintain high levels of genetic variation in natural populations. Even if mutation rates would increase by a factor of 10, newly induced mutations would represent only a very small fraction of the variation present at any one time in populations of outcrossing, sexually reproducing organisms." (Dobzhansky T, Ayala FJ, Stebbins GL, Valentine JW: Evolution: W.H. Freeman, 1977, p. 72)

"mutations are rarely if ever the direct source of variation upon which evolutionary change is based. Instead, they replenish the supply of variability in the gene pool which is constantly being reduced by selective elimination of unfavorable variants. Because in any one generation the amount of variation contributed to a population by mutation is tiny compared to that brought about by recombination of pre-existing genetic differences, even a doubling or trebling of the mutation rate will have very little effect upon the amount of genetic variability available to the action of natural selection.

Consequently, we should not expect to find any relationship between rate of mutation and rate of evolution. There is no evidence that such a relationship exists." (Stebbins, *Processes of Organic Evolution*. Englewood Cliffs, NJ: Prentice Hall; 1966., p. 29)

"Those authors who thought that mutations alone supplied the variability on which selection can act, often called natural selection a chance theory. They said that evolution had to wait for the lucky accident of a favorable mutation before natural selection could become active. This is now known to be completely wrong. Recombination provides in every generation abundant variation on which the selection of the relatively better adapted members of a population can work." (Mayr, *The Resistance to Darwinism and the Misconceptions on which it was Based*. In: *Creative Evolution?* Edited by Campbell JH, Schopf JW. London: Jones & Bartlett, Inc.; 1994, p. 38)

"The process of mutation supplies the raw materials of evolution, but the tempo of evolution is determined at the populational levels, by natural selection in conjunction with the ecology and the reproductive biology of the group of organisms" (Dobzhansky, 1955, *Evolution, Genetics and Man*. New York: Wiley & Sons, Inc, p. 282)

"It is most important to clear up first some misconceptions still held by a few, not familiar with modern genetics: (1) Evolution is not primarily a genetic event. Mutation merely supplies the gene pool with genetic variation; it is selection that induces evolutionary change." (Mayr, *Animal Species and Evolution*. Cambridge, Massachusetts: Harvard University Press, 1963, p. 613)

"Each unitary random variation [mutation] is therefore of little consequence, and may be compared to random movements of molecules within a gas or liquid. Directional movements of air or water can be produced only by forces that act at a much broader level than the movements of individual molecules, e.g., differences in air pressure, which produce wind, or differences in slope, which produce stream currents. In an analogous fashion, the directional force of evolution,

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natural selection, acts on the basis of conditions existing at the broad level of the environment as it affects populations." (Dobzhansky T, Ayala FJ, Stebbins GL, Valentine JW: Evolution: W.H. Freeman, 1977, p. 6)

"Novelty does not arise because of unique mutations or other genetic changes that appear spontaneously and randomly in populations, regardless of their environment. Selection pressure for it is generated by the appearance of novel challenges presented by the environment and by the ability of certain populations to meet such challenges."(Stebbins, Darwin to DNA, Molecules to Humanity. San Francisco: W.H. Freeman and Company, 1982, p. 160)

Thus, precisely as I explained before, in the MS the "gene pool" serves as a "buffer" that insulates "evolution" (=shifting gene frequencies) from any influence of mutation that might result in a rate-dependence or in a directional influence of mutation biases. The MS architects spilled much ink on elaborate hand-waving arguments for why the "gene pool" would have this effect, but in the end, these arguments come to nothing, because the conclusion is wrong.

Arlin

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