

Re: genetic variation is purely random, right?

## Re: genetic variation is purely random, right?

---

*Source:* <http://sci.tech-archive.net/Archive/sci.bio.evolution/2006-03/msg00472.html>

---

- *From:* "John Edser" <edser@xxxxxxxxxx>
  - *Date:* Thu, 30 Mar 2006 11:36:34 -0500 (EST)
- 

"Peter F" <19eimc\_minus19@xxxxxxxxxxxxxxxx>

JE:-

De C Studdert wrote at least two books. The other is "The Desert Ape".

Studdert has always maintained that the data he collected over many years

verifies a significant correlation between significantly distorted Mendelian common mouse coat color genes and an applied stress acting on either parent. Studdert experimentally applied contradictory stressors to mouse parents using Han's Selye's pioneering concept of Eustress (too much of a good thing) Vs Distress (too much of a bad thing).

From my point of view I am not sure that you are as right "as can be", or that you have optimally represented and not obscured the "potential virtue" of these two concepts.

1. Too much of good (eu)stress => exhaustion ~ = a detrimental stress that if not ceasing will become as deadly as any distress caused by any distressor that does not desist; yet it may OR MAY NOT become a subjectively painful, nor altogether objectively painful (or typically distressing as evidenced as far as possible by physiological, hormonal, neurologically, and visibly emotional, signs or markers) experience.

Re: genetic variation is purely random, right?

JE:–

I would put it this way: while eustress produces physiological damage it does not necessarily provide a negative emotional experience along with that damage. The net result is you may feel good even while eustress is doing you harm. I also argue that eustress provided by excessive group attention can provide the emotional ammunition to allow for individual self sacrifice where this effect is selected at the organism and not the group level.

This is not the case for distress which always feels bad while it does you harm. Here is a current physiological/psychological example. Edibility is emotionally indexed to sugars which are experienced psychologically as a pleasant sweet taste via the taste buds on the tongue. These can only discriminate sweet, salt and bitter. Biologically normal (unrefined) foods almost always contain only a small quantity of sugars. Natural selection employed this sugar trace as an effective psychologically based (emotional) edibility index. If it is sweet then mostly, it is OK to eat. Because the concentration of sugars within unrefined foods remained low, sugar over consumption was almost impossible until the industrial revolution. Our emotional urge to mostly look for the sweeter natural foods served us well until then. After that point we suffered sugar eustress on mass. The net physiological effect of this is to produce a damaging simple carbohydrate addiction. This produces cycles of hyper (high) and hypo (low) glycemia (blood sugar level) placing an abnormal and utterly exhaustive level of work on the pancreases and related glands. Not only does consistent simple carbohydrate excess negatively effect the body, it negatively effects the mind producing cycles of elation and high energy levels which later reduce to depression and low energy unless you reach for a Mars bar to start the cycle all over again (producing the addiction). Psychologically, simple carbohydrate eustress always provided a positive emotional experience. Because we are mostly emotionally and not rationally based organisms the terrible damage that consistent simple carbohydrate addiction can produce still remains ignored. We LIKE this eustress experience so we will not be told that simple carbohydrates damage our health. Every day millions if not billions in health care could be saved if we paid more attention to just this one problem.

2. [This comment contains a to me even more important call to be careful about what we mean with these concepts.] Too much distress, is as you describe it, too much of a bad thing.

However, "too much distress" is also a description of a maladaptive reaction – by definition!

JE:–

Ok (refer to the example above).

And, as we all 'ought to' know, many adverse environmental challenges that stimulate a sensory or motivational \*overload\* are handled \*automatically\*

Re: genetic variation is purely random, right?

Re: genetic variation is purely random, right?

[here i.e. independently of whatever the patterns of brain activity are that generate, and that in principle can be used to define, our levels and contents of "conscious awareness" – or, EPTly put, how we "pay and transiently focus attention"] by highly specific synaptic hibernation (i.e. the neural "gating" of signals on their way to generate self–defeating distress reactions).

JE:–

I think I agree but I AM NOT SURE :–(

Could you restate the above so it is simple to understand?

<snip>

Here is a short sample from Studdert's book that might (as I see it!) provide a peek at one past source of your (John Edser's) ideological inspiration:

From The Stress Theory of Evolution, by Richard de C Studdert:

#### SELECTION

It never ceases to amaze people what small margins of survival value are sufficient to select the fittest. But for anyone conversant with the exponential growth curve and the amount of evolutionary time available, it should not amaze.

For instance, if one better adapted offspring born every 1,000 years can be attributed to trait A over trait B, then trait B will disappear in an evolutionary flash. Because of this elimination of the ever–so–slightly less–fit species and the impossibility of two species being and remaining exactly equal in survival value, for any significant period we get the principle of "one species only per niche." This is a basic rule of ecology that we must always respect.

JE:–

I agree with Studdert that just tiny differences in "survival value" are sufficient to produce evolutionary changes. Of course, I have always maintained that individual genes can only have a non additive empirical (epistatic) Darwinian fitness. I define fitness in an entirely refutable way: the total number of just fertile forms reproduced into only one population by each parent. Because evolution occurs per population, it follows logically that each Darwinian selectee (each fertile form) can have a different fitness per population.

Re: genetic variation is purely random, right?

Re: genetic variation is purely random, right?

The thing being selected is the trait, determined not usually by a gene but more often by a combination of genes. Individuals who possess adaptive traits are selected in, while individuals who possess maladaptive traits are selected out — that is, culled. Except for preselection, selection occurs at the individual level always, but selection is often much more severe in certain groups within a species, thus constituting apparent group selection.

JE:–

I had discussions with De C Studdert about this when he was well. Initially Studdert remained in two minds concerning group selection. Later on he came to believe that group selection existed and it could override individual selection. I believe that this was mostly because of his left leaning politics (Balmain, where he lived most of his life was the working class suburb of Sydney in which the Australian Labor Party was founded). I have always maintained that political (or any) belief pollutes the sciences. One of the most important functional aspects of our unique adaptive group response: trade, which is mutualised exchange, is almost 100% politicized. It remains almost impossible to have a scientific discussion of trade, i.e. mutualised exchange as an entirely non politicized process.

With regards to group selection: It is easy to prove that if the fitness of one group is just the simple addition of the fitness of each group member then no group selection can possibly exist, no matter how you define fitness.

Regards,

John Edser  
Independent Researcher

edser@xxxxxxxxxx

Re: genetic variation is purely random, right?