“THE SINS OF THE FATHER…”

 BY

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Political correctness is somewhat akin to a plague which imposes a blanket of silence on society and which in turn enables those with an agenda to impose their will on society while screened from scrutiny.

(Dr Ben Carson).

The statement is very apposite at the present time because it reflects so accurately recent events in the academic world which have sought to silence and shut down discussion and publication of the results obtained from recent research into the subject of epigenetics. A case in point in this regard is that of research carried out by Sidhartha Mukherjee at Columbia university. Similar reactions have been felt in the UK where students even attempted to organise a petition to stop further research and prevent publication of further results with which they did not agree.

These examples clearly reflect the politically correct bias held by many both inside and outside the academic world by those who wish to preserve the mythology of “equality” and preserve the fiction that “equal to” means “the same as” when experience clearly shows that this is not the case.

Part of the reason for this dogma still holding sway is due to unfortunate experiments and publications in the past which embraced Lamarckian and Mendelian theories of inheritance and resulted in clumsy or uninformed attempts by proponents from various political hues to change the course of human inheritance without fully understanding underlying genetic processes.

However the fact remains that the underlying processes of genetics and evolution are subject to the influence of environmental and behavioural processes and that genetic coding which is unique to every individual can be permanently and irrevocably altered and modified by events.

There is abundant evidence available in support of this hypothesis which includes for example, everything for the Dutch Hunger Winter through to threat aversion in mice all the way through to inducing recognition behaviour in single cell organisms (although how this happens remains a mystery in light of the fact that single cell organisms do not posess a nervous system and therefore have no memory mechanism!).

Of even greater interest is the fact that it has been shown that acquired characteristics can be passed on to second and third generations and beyond. The details of these research outcomes are too numerous to detail here however for the avoidance doubt it is worth outlining briefly some of the findings as to how the “first generation”of genetic change occurs and how these changes manifest themselves in the population at large.

During studies of genetics it was found that there is a component in cellular structure which keeps specific genes switched on or off and that component is the Epigenetic system which controls how the genes in DNA are used and more particularly how the effects of changes to the genetic system are inherited when cells divide Thus the Epigenetic system modifies the original blueprint of the DNA and the epigenetic system exists over and above the basic structure of the DNA blueprint.

It is important to note that cells and organisms can adapt their gene expression to changes in the environment. The DNA sequence and the epigenetic sequence operate side-by-side but while the DNA sequence remains fixed or only changes over many generations, the epigenome sequence can change rapidly in response to changes in the environment and allows an organism to change its gene expression to fit its environment without changing its DNA code. The molecular structure of DNA can be amended by the attachment of chemicals and/or proteins which can change the expression of nearby genes.

 It is now well established that acquired physical characteristics can be inherited by the next generation but this begs the question as to whether or not acquired behavioural characteristics can be inherited by subsequent generations.

Experiments with rats have shown that the young which have been treated well by their parents grow up to be contented rats whereas those reared in an inadequate environment grow up to be disaffected. The disaffected personality develops while the brain is at its most plastic stage of development and thus the structure of the brain remains permanently altered and the altered structure can then be passed on to subsequent generations. Thus we can see that molecular events can underlie psychological damage and early childhood experiences can change physical aspects of the brain during its development. An abusive environment can lead to psychiatric events in later life and we know for example that traumatic childhoods can cause stress which in turn produces an excess of cortisol which means that as adults they remain permanently stressed leading to mental and physical disorders which can be passed on via the epigenetic system to subsequent generations.

All this being the case it is now incumbent upon us to examine how it is that these structural changes in the physical and psychological facets of the human persona become manifest in society at large.

The main thrust of this discussion is to try to analyse some of the reasons that this mutant condition can come to gain traction and eventually come to dominate any sample population. The fact is that the mutant tendency within the sample population comes to dominate for reasons which are inherent products of the mathematics of probability. This probability is itself an inherent quality possessed by the sample population. Thus only an understanding of this behavioural and genetic combination can the problem be understood.

In any sample population there are two and only two genetic states namely the Dominant state and the Recessive state. The Dominant state defines those members of the sample population whose genetic stock has a tendency to improve or at least maintain the staus quo. The Recessive state defines those members of the sample population which has a tendency towards retrograde development.

Thus all members of a sample populationhave but two choices and there is a finite probability that an individual member will belong to one group or another. This condition allows us to study the distribution of genetic variation as a probability function by introducing the well known Hardy-Weinberg theorem and using the theorem as an aid to understanding the causes of genetic variation in the sample population, and for the sake of convenience I label these states *'D'* and *'r'* respectively. These tendencies will occur in the combinations shown below.

First Second Frequency of

tendency tendency occurrence

D D D x D = $D^{2}$

D r D x r

=2Dr

r D r x D

r r r x r = $r^{2}$

Thus there is a 1/4 (25%) chance that a sample member will make a decision to belong to the *'DD'* dominant group which occurs with a probability of . Likewise there is 1/4 (25%) chance that a sample member will make a decision to to belong to the *'rr'* recessive group which occurs with a frequency of . it follows that 1/2(50%) of the poulation will be a mixture of *'D'* and *'r'* tendencies whose sample members will occur with a frequency of *2Dr.* The frequency of occurrence described above is in fact the same expression as that for the joint probability that any one behaviour tendency will dominate and the sum of these characteristic behaviour tendencies or the joint probability is then :-

*DD + 2Dr + rr = 1 (100%)*

Thus the principle equation of probable tendency is established as:-



This equation can be used to establish the probability of any tendency in any large sample population. For example take any population of 20,000 individuals. Let us say that the number of members of the sample displaying recessive tendencies in that population is  i.e. 1/20,000 or 0.00005 and the frequency of this group is $\sqrt{0.00005} ≈ .007$

Since all individuals must belong to one group or another then the frequency (probability) of both tendencies must be *1* since *D+r = 1.* From this we can calculate the frequency of the dominant tendency *'D'* i.e:-

  *D + r = 1*

 *D = 1 - r*

 *D = 1 - .007*

 *D = .993*

A further calculation will establish the probability of the occurrence of the recessive tendency in the 'undecided' population i.e:-

*2Dr = 2 x .993 x .007 = .014*

That is to say 140 in 20,000 will have the probability of a tendency towards recessive characterstics while only 1 in 20000 will actively participate in the same recessive tendency.

What does this mean for the sample as a whole? Simply this. As soon as the number of sample members displaying recessive tendencies reaches a total of $25\%$ of the population, in this illustration 5000/20000 ( i.e. the value of$r ^{2 }$= .25), the proportion of sample members possessing a tendency towards recidivism exceeds 50% of the population i.e :-

# 2Dr = 2 x .5 x .5 = 50%

Put simply, recessive tendencies exceed dominant tendencies at this point.

Thus as *2Dr* increases over time up to a total of 50% and then gradually decreases over time, while$r^{2}$ increases proportionately and we can calculate the probability of the tendency towards recidivism at any point in any given large sample population.

This establishes that it is possible to predict with some accuracy the tendency for genetic phenomena to change from a dominant to a recessive tendency in any sample group.

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