

Do our genes define  
who we are



Thorough researches have been done on the complex accounts of human hereditary, yet it has not been exhausted. The history of human hereditary stretches from the era of the Greek materialists to our contemporary time; presented as theories of generation with in-depth analysis “ on the relative contributions of nature and nurture to the formation of the physical, mental, and moral characteristics of people (Rapp et al. 2001, p. 386). Tribute is given to Gregor Mendel, whose discovery of genes and subsequent founding of the science of hereditary has greatly simplified this research. Based on his fundamental discovery, people could easily delve into the details of the phenomenal work and thereby shed more light on it. New vocabulary such as genotype, phenotype and chromosomes weltered in the research.

Precise generational analyses that were almost cumbersome for biological scientists previously, became a doable venture. Rapp and others, argue in their book that the classical scientists endeavored to classify, taxonomize, and experiment with the building blocks of life; to fathom family resemblances (Rapp et al. 2001, p. 387). The modern biologist now find is rather easy to correctly assess a person’s background through the use of modern equipment and refined knowledge that they have acquired since the days of Mendel, Bateson (William), Johanssen (Wilhelm), Morgan (Thomas), and now Watson (James). It is on this account that this paper debates whether our genes define who we really are in the context of our ethnography.

Introduction

The paper is divided into four parts with the major aim of explaining, with illustrations here and there, how our genes do or do not define who we are. The first part shows various scenarios where a person's genotype defines who s/he is in fundamental terms. These are brought about by the chemical composition of the chromosomes. Issues such as of gender and race are extensively explained as direct consequences of particular genes. Similarly, certain conditions that manifest themselves in man are purely genetical such as schizophrenia.

Environmental factors are also cited as indispensable contributors to an individual's character. But it is the combination of both that attempts a correct definition of a person. Another factor that explains the way we behave and socially interact is the hereditary traits which extend from our inherited genes.

Finally, the reader should not conceive of some ideas herewith as the writer's. It is a scholarly work that has been intensely researched from the jumbled opinions of academicians of varied spectra. My analysis comes after juxtaposing and thereby synthesizing the said views

#### How Our Genes Influence Our Behavior

The discovery of the sex chromosomes was touted as the definite indicator of an individual's sex, replacing the traditional method. One's gender was previously determined by a mere look at the genitals. It was therefore impossible to distinguish a boy from a girl in cases where genitals did not provide clear answer. Such cases are nowadays solved by chromosomal test (Schaap 2002, p. 33). Within the chromosomes, we have the genes that

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determine, to a large extent, our abilities, preferences and emotions.

Rabinow define genes as segments of DNA (Deoxyribonucleic Acid) a code for proteins. DNA is a composite of four bases bonding into two kinds of pairs wound to form a double helix (Rabinow 1996, p. 94). They are the conduits of information of cells thus their functionality should not be underestimated.

Rabinow foresaw that the advent of the new genetics would be an immense force to reckon with in re-modeling society and life. Far much greater, a force, that the revolution in physics for the reason that it will be embedded across the social fabric. Moreover, he noted that at the dawn of a new genetics, the phenomenon will be a systematic flow of identity terms and restriction loci, in which a truly novel type of autoproduction will appear (Gunning & Holm 2006, p. 48).

Genetics, no doubt, define man as a myriad of scientific research have shown. One's race for example is definitely a genotypic chemistry. An offspring of black parents will definitely be black unless some mutations occur in the gametes thus deleting melanocytic genes; and the result is an albino. Whites will always have a white offspring, while in the cross racial mating; a mulatto will be born for example the current US President.

These differences in hair texture and color, skin complexion, color of the eye, our voices et cetera; is generated to a large extent by our genes. However, Brian Smedley argues that even though one's race is determined by one's genes, the ideology of racism encompasses to a large extent the cultural environment where it originates (Smedley & Smedley 2005, p. 19). He thus says:

“ Race therefore can be seen as an ideology or worldview, and its components have often been spelled out explicitly in social policy. The ideological ingredients can be analytically derived from ethnographic reality (i. e., from descriptions of racist behavior, and especially from the hundreds of historical publications that document the existence of race and racism in North America)” (Smedley & Smedley 2005, p. 20).

According to Lumsden-Wilson theory of gene-culture coevolution, genes code for epigenetic rules determines the probability of changing from one behavioral trait to another. This is a rather obvious fact in human sociobiology where genes are said to dictate a particular trait (Alper & Lange 1981, p. 2). It is little wonder then that James Watson, a Nobel laureate, co-discoverer of the structure of DNA, and first leader of the Human Genome Project, quipped: “ Now we know, in large measure, our fate is in our genes” (Jaroff 1989, p. 62).

It is evident that our genes determine our behavior and thereby define who we actually are. Certain conditions such as schizophrenia have been reported as linked to a particular gene. As a result, anyone carrying this gene is either schizophrenic or has its mild symptoms. Accordingly, these patterns of behavior unique to every individual are direct repercussions of one’s genetical composition.

#### The Influence of Nurture on Nature

In the foregoing argument, environmental factors have been identified as of considerable influence on one’s genes and hence, together they define who one is. One is wont to believe, naively though, that one’s holistic personality

is a sole consequence of genes. Not quite so. Intricate as it is, environmental factors play a crucial role in the determination of an individual's character. It is the combination of the two that gives the overall picture of one's characteristics. For instance, the gene that is associated with our gender is inherited directly from the respective parent without any interference of the environmental factors. But, how an individual will grow into maturity will be dependent upon the cultural and geographical factors of the locality.

The environmental influence often takes a sociological trajectory to a large extent. Indeed it synchronizes with the genetical aspect of a person to model him/her into a quite unique individual when fully grown. Eleanor Maccoby, a psychologist at Stanford University illustrates how nurture comes in once nature has done its part in the life of an individual. She uses gender development as her case study discussing the relationship between family gender socialization and childhood sex segregation:

“ Individual boys, each primed by parents to respond positively to overtures of rough, arousing play, will choose each other as playmates and build up a group, in the process of playing, more distinct from female-type. And girls individually sensitized by their parents to other's feelings, or in a state of greater readiness to receive socialization inputs of this kind from their parents, will use these development attributes to build a new and distinctively female type of interaction with their playmates. Participating in these forms of interactions will make girls more likely to seek other girls with whom they experienced satisfying forms of female-type interaction. And by virtue of the same-sex group interaction that occurs, a group identity, a

group esprit, is built up, distinctive to all-girl or all-boy groups”(Lippa 2002, p. 198).

Furthermore, Lippa argues that in modern-day, nurture eclipses simple socialization explanations of gender and models an individual against the backgrounds of societal roles, gender segregation and peer influence, stereotypes, and current social settings (Lippa 2002, p. 206).

According to Kail & Cavanaugh in their book *Human Development: A Life-Span View*, human development is always shaped by both nature and nurture and their influences are mutually interactive. The duo illustrates this cordial relationship by giving an example of individuals who inherit a disease that leads to mental retardation upon the consumption of dairy products. But, if their environment does not contain dairy products, then they develop normal intelligence. Another similar example is cases of heart attacks where hereditary are one risk factor for cardiovascular disease. Nevertheless, the life-style factors such as diet and smoking play crucial roles in determining who gets heart attacks (Kail & Cavanaugh 2002, p. 4).

Lastly on this intricate interaction, it is debatable whether, against the backdrop of universal versus context specific development, there is just a single way of development or several. The writer argues that even though there seem to be differences in development, only a single fundamental developmental process there is for everyone. Differences in development, as matter of factly, are merely variations on fundamental developmental process in the same way that car as different as a Chevrolet, a Honda, and a

Porsche follow the same fundamental procedures during manufacturing processes (Kail & Cavanaugh 2002, p. 6).

### Human Hereditary Characteristics

Certain behavioral patterns of man are reckoned to pervade the ancestral lineage. Research has shown that traits that occur over and over again throughout a number of generations can either be a boon or a bane to the individual. These hereditary traits do occur regardless of their repercussions. The genes that embody them are always passed down by parent thus making the offspring to develop likeness with either of the parents. Eventually we find ourselves as somewhat conditioned by these genes. It is mostly in the forms of illnesses that these inheritable genes become a bane. Diseases such as, diabetes, some forms of cancer, mental retardation, sickle cell anemia et cetera, are just but a few of the illnesses that define us as cascaded by parental genomes Among the hereditary qualities that come to our advantage is the ability to sing.

In Rudolf Steiner's Manifestations of Karma, an example is given of a family (Bach's) which produced numerous gifted musicians over many generations; actually a whopping twenty talented musicians were born there (Steiner 2000, p. 107). He argues though, that it is not a case of pure inheritance that breeds a musician, other factors come into play (environmental of course, as explained somewhere in the paper). The writer agrees with him to the extent that these factors do not act in isolation, that is to say, without recourse to a particular inherited (in this case) genotype. Steiner refers to this 'inheritable genotype' as the 'ability to..' (or is it a case of utter confusion?) when he



explains that one can have the external characteristics yet lack the ability to sing. It is this remark that makes the writer points at the gross misinterpretation of the term (Steiner 2000, p. 107).

The science of eugenics developed by Sir Francis Galton in 1883 to encourage interventions in a bid to “ improve the quality over generations of human populations” (Rapp et al. 1996, p. 386) is chiefly based on the simple fact that gene inheritance is a crucial phenomenon in defining our personhood. Although its designers were good intentioned, the moral implication that the science creates is repugnant. It will breed super humans thereby interfering with natural process of coming into being. In coming up with this theory, Galton must have assessed the crucial role played by gene-inheritance to conceptualize a hybrid thesis (Rapp et al. 2000, p. 386).

In the transmission of these hereditary characteristics, one is prone to encounter gradual cultural transformation. Some hereditary behavioral dispositions are so malevolent that they give a repugnant stereotypical connotation to a society that hosts such individuals. For instance, in the colonial Central African Republic there was an abnormal libidinous behavior among the indigenous population. So when they encountered the French and lured them to their hyper-rated groinal proclivities, they got infected with syphilis which almost wiped out the entire population (Hunt 1994, p. 111).

Hereditary diseases such as epilepsy, though affects the body, can be linked to the mind. The mind is likely, as a result, to become unhealthy. Madness may set in with its devastating consequences to both the affected individual

and the society. In addition, culture that relies primarily in the power of the mind will be jeopardized by this malady (Thomas 2002, p. 35).

## Conclusion

After all is said and done, the writer can assert with unwavering authority that our genes do define us. As has been said by scholars of different stature, the overall personhood of an individual is a result of a complex and sometimes inexplicable interaction between one's genotype and the environment. Therefore the phenotype of one is the total sum of nature - nurture phenomenon.

However, caution must be taken when studying mutational differences. For example, a black person may lack melanocytes -the skin pigmentation cells - not because s/he inherited the deficiency from parents (which may be the case sometimes) but because of nuanced alterations in the structure of her/his DNA. That is to say, not a hundred per cent of one's personhood is given, some are acquired. In most cases we have encountered scenarios where a child exhibits a radically different characteristic alien to his or her parents. The best explanations people always give to such cases leave no doubt about the external acquisition