

The Ultra-Genius Gene: Micro-Evolution and Genetic Anomalies

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Martin Luther started a big thing – so did remarkable revolutionaries like Gandhi, Einstein, and Bach. Thomas Kuhn (1962) would identify them as revolutionaries—those who shatter dominant paradigms and are the architects of new ideas. In many instances, these phenomenal folks seem almost to be from another planet. Mozart is said to have composed many of his major works by writing out the score without pause (as if he was copying someone else’s finished work). Buddha, Jesus and Mohammad held visions that lay outside the normal perspective of those who dwelled on earth. Einstein, Bohr and Wittgenstein wrote about and debated about worlds that most of us (almost a century later) can still not comprehend.

How do we account for those who are often identified with superlatives that transcend the usual category of “genius”? Certainly, these ultra-geniuses benefited from history and social, cultural and political context. Martin Luther might have just been a discontented and discounted clergyman if the social and political forces weren’t aligned at one particular moment in Western European history with his radical vision. In fact, as we know, Luther was not really very supportive of much that occurred in conjunction with his reformation. Gandhi similarly released social and political forces that were not only beyond his control, but also counter to his own values and vision of a just society (how would he react to the current conditions in both Pakistan and India?) Could Einstein have been as influential, if he operated in the scientific community of 19th Century Europe (or even in early 20th Century Asia)? As Thomas Kuhn has noted, there are many potential revolutionaries who remain on the sidelines with regard to the formulation of new paradigms. Only a very few have the good fortune to be influential (let alone become the architects of new paradigms). Successful revolutionaries need sponsors, supporters— and critics.

Many factors obviously contribute to the success of ultra-geniuses. One of these factors is now emerging in the field of evolution. Perhaps these men and women are the genetic anomalies that lead eventually to gradual modifications (for good and ill) in the gene pool. Do these ultra-geniuses have too much of something or perhaps less than most people of something else that leads them to be particularly skillful in doing a few things or leads them to see the world in a different way? Neurobiologists are now often citing the capacity of our brains to adjust and shift priorities –a process known as neuroplasticity. Men and women who are blind often claim for other purposes those segments of their cortex that are usually occupied with visual matters. Those with extraordinary capacities in fields such as music (Mozart), scientific theorization (Einstein) or societal visioning (Gandhi) may have brains that are wired a bit differently from the brains most of us possess. As Howard Gardner (2011) has long advocated, there are multiple intelligences that allow all of us to be good at doing certain things – and that might allow a few

of us to do these few things at an exceptional level. The rewiring might have occurred before birth (as genetic anomalies or “mistakes”) or after birth (neuroplasticity).

Anomalies, Revolution and Micro-Evolution

Anomalies are potentially critical to not only the creation of ultra-geniuses but also even more fundamentally the process of evolution. If there are no anomalies (called “mutations”) in a population then evolution will not take place. Revolutions and innovations of any kind require that things are not going quite right. There must be anomalies and variations if evolution is to take place. Within human culture, there is an even more subtle process taking place. We don’t have genetic mutations but we do have diverse ideas that generate innovations. As noted by Stephen Greenblatt in his Pulitzer Prize-winning book, *The Swerve*, the critical role played by mutations and mistakes goes back many centuries to the writing of Lucretius in *The Nature of Things*. As interpreted by Greenblatt (2011, p. 188), Lucretius is proposing that:

Everything comes into being as a result of a swerve. If all the individual particles, in their infinite numbers, fell through the void in straight lines, pulled down by their own weight like raindrops, nothing would ever exist. But the particles do not move lockstep in a preordained single direction. Instead, at absolutely unpredictable times and places they deflect slightly from their straight course, to a degree that could be described as no more than a shift of movement.’

In contemporary times, Scott Page (2011) writes about the generation of multiple ideas (mutations) and the power of diversity within any system in his very challenging book, *Diversity and Complexity*. Page suggests that a world filled with many perspectives is one in which good ideas, clear thinking and accurate information is likely to emerge: “if we have lots of diverse paths . . . , we are not likely to make mistakes. If we only have a few paths, mistakes are likely. “ (Page, 2011, p. 240) Page makes a strong case for the important interplay between complexity and diversity. Systems that are complex and diverse will be more resilient and amenable to change:

Systems that produce complexity consist of diverse rule-following entities whose behaviors are interdependent. . . . I find it helpful to think of complex systems as “large” in Walt Whitman’s sense of containing contradictions. They tend to be robust and at the same time capable of producing large events. They can attain equilibria, both fixed points and simple patterns, as well as produce long random sequences. (Page, 2011, pg. 17)

There is one thing we have learned in recent years with regard to the viability of any society that has almost become an axiom: if there is extensive variability (disturbance) within the environment in which a society operates, then there must also be extensive variability (diversity) inside this society if it is to remain viable. Page identifies this axiom as the *Law of Requisite Variety*:

. . . the greater the diversity of possible responses, the more disturbances a system can absorb. For each type of disturbance, the system must contain some counteracting

response. . . . The law of requisite variety provides an insight into well-functioning complex systems. The diversity of potential responses must be sufficient to handle the diversity of disturbances. If disturbances become more diverse, then so must the possible responses. If not the system won't hold together. (Page, 2011, p. 204, 211)

Is it possible that the micro-evolution occurring within diverse, innovative societies is propelled in part by the biological anomalies (mutations) that are to be found among the ultra-geniuses? Do biology and sociology come together when we consider the nature of revolutions? Is Luther's revolution a combination of his own mutated genetic makeup and the mutating diversity of Western European society during the reformational era in which Luther lived?

The Other Side of Evolution

We must also consider the less robust side of evolution and revolution. Like the forgotten men and women in Kuhn's tales of scientific revolutions, many of us with genetic anomalies might find these anomalies to be "disabilities" and a source of social alienation (even cause for us being labeled "insane" or mentally inferior). It might require an alignment between one's mental/ physical anomalies and social, cultural or political forces to ensure ultra-genius status. The athlete who can run faster and farther than anyone else will find these talents to be of great advantage only if she lives on the Savannah of Africa or participates in the Olympics. Otherwise, these talents may go to waste or be discounted.

I am reminded of the life led by Mack Robinson, the brother of Jackie Robinson (who famously broke the color-barrier in American baseball). Mack won the Silver Medal in the 200 meter dash at the 1936 Olympics (losing only to Jesse Owens) and graduated from the University of Oregon (setting many national track and field records). Some say that Mack was even more talented as an athlete than Jack; yet when he returned home to Pasadena California, he found no hero's welcome or even a decent job. He cleaned streets in his Olympic jacket. Though Mack was honored much later in his life, his ultra-genius skills (perhaps genetic anomalies) were not appreciated in the late 1930s and he suffered greatly from this mismatch of talent and contemporary societal attitudes and structures (as did his brother in a more triumphant manner).

There is an additional downside to the ultra-genius hypothesis. The potential genes that lead these exceptional people to influence human evolution might not be all-to-the-good. For instance, some evolutionary biologists – and philosophers—have questioned the environmental advantage of consciousness in human beings. Would we be better off operating more like zombies than like self-conscious human beings who are constantly balancing off interwoven thoughts and feelings? Does consciousness lead us to both art and war? Are we not only intelligent creators, but also bigots, liars and thieves—violent and self-justifying? Was Hitler "blessed" with exceptional genetic anomalies that led to divergent viewpoints and exceptional oratorical skills? Would we (or at least our planet) be better off without those ultra-geniuses who have helped to "elevate" our species to the point that we dominate the resources of our fragile earth? Would we be better off without Martin Luther and the societal changes that his theology inspired? Obviously, we need to change our current consciousness if we are to

survive as a species and if our world is to survive our dominance. Yet, would these issues of survival even become center-stage if we had remained hunter-gatherers or, like other primates, a minor species (in terms of environmental space occupied)?

The Ongoing Evolution of Humankind

Perhaps it is most important to recognize that human evolution is not finished. We are still changing (for good or ill) and this change is not occurring in an orderly manner, but rather through the random (even chaotic) variation in genetic makeup found among members of our species and through the swerving and diversity of social systems that have been described by Greenblatt and Page. With the emergence of micro-evolution as an important field of study, we must come to the startling recognition that nothing is constant and unchanging – including the fundamental makeup of social systems and individual human beings. If Martin Luther was to nail some radical proposals on the door of a contemporary church, corporation or government office, it might contain some wishful statements regarding human micro-evolution and the possibility of further improvement in individual and collective human capacities. Such proposals might be nothing more than representations of human search for meaning, purpose and advancement—but perhaps these characteristics are adaptive. They may have first appeared in the genetic anomalies of an ancestor—whom we might label an “ultra-genius”.

References

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