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Are the Core Values of the Ancient Accepted Scottish Rite Compatible with a Theory Associated with Population Genetics?

A foundational theory of population genetics defines success as the ability of an organism to not only produce offspring, but also to have that offspring produce offspring as well. Put another way, success of man, from a genetics perspective, is the ability to ultimately produce grandchildren. Published literature postulates that genetic success necessarily requires an organism to live a "self-serving" existence and that altruistic behavior undermines the ability of an individual to reach genetic success. The Ancient Accepted Scottish Rite (AASR), in contrast, promotes core values focused on self-improvement, many of which require the well-intentioned Mason to behave in an altruistic manner. This paper will review these apparently divergent concepts and argue that they are actually ideas that are complementary, particularly in current times.

Prior to evaluating the potential compatibility of a popular theory of population genetics and the core values of the AASR, the foundational principles of genetics must first be introduced and explained. Higher organisms, which include man, rely on sexual reproduction in order to generate offspring. Every human's genetic makeup is composed of 23 pairs of chromosomes, with each parent contributing one pair of each of these chromosomes to their child's genetic makeup. In some genetic diseases, disorders in chromosome pairing can yield significant congenital abnormalities. Down's Syndrome (also known as Trisomy 21 – where an affected individual has three copies of chromosome 21) is the most common example of such a disorder. While this disorder highlights the criticality of accurate chromosome pairing to facilitate normal development, genetic defects are beyond the scope of this paper and will not be further considered. Chromosomes that are present in almost every human cell consist of genetic material known as deoxyribonucleic acid (DNA), and long sequences of DNA make up functional units called genes, that ultimately allow the cell to function.

The central dogma of molecular biology is the basis upon which the importance of genetic material in human cells can be explained.[1] Briefly, the genetic material (DNA in a gene) in a cell is used as a template by its replication apparatus to generate messenger RNA (mRNA), which in turn is used as a template to generate proteins. Within a person's chromosomes are encoded several thousands of genes, many of which contain "genetic scaffolding" that individual cells utilize to ultimately generate proteins, which are macromolecules used by the cells as enzymes, hormones, and/or building blocks for other cellular components. Many of the genes that are used to generate these proteins can mutate their sequences slowly over time,[2] often as a result of exposure to mutagens (such as ultraviolet light or toxic chemicals such as those present in cigarette smoke, for example) or cellular replication infidelity of cellular division (known as mitosis), which naturally occurs at very low frequency.[2] In most instances where genetic mutations occur, no impact on the encoded protein structure or function is realized. However, in some instances, protein function can be negatively or positively impacted. Spread over many millions of years this phenomenon gives rise to genetic variation between individuals within a given species. Put another way, without genetic variability every person would be a clone of a parental organism and have identical characteristics.

The fact that genetic variability exists is also the basis of Charles Darwin's theory of natural selection.[3] The layman explanation of Darwin's theory is described as "survival of the fittest". As mentioned above, most genetic mutations have no impact on the function of protein needed for cellular (and ultimately human) survival and are considered "genetically silent". In contrast, some genetic mutations may result in altered proteins that either gain or lose function compared to their normal counterparts. Over long periods of time, mutations in critical proteins can result in a gain or loss of genetic advantage where the ability of the organism to survive is

affected. Additionally, it is postulated that minor genetic modifications can accumulate over time, eventually resulting in a genetic advantage.[2] Mutations that result in a gain of function will allow some organisms to have a survival advantage over other organisms without that given mutation. This selective advantage over time is the basis for the evolution of species. It assumes that organisms lacking advantageous mutations fail to adapt and ultimately have a lower survival rate compared to organisms that adapt genetically to their environment.

This theory of genetic advantage has also been used to postulate an explanation for sociological behavior associated with reproduction. This concept is explored and very well-presented in the non-fiction scientific book called "The Selfish Gene" by Richard Dawkins.[4] The basis for this theory is that reproduction has inherent survival risk, and organisms that survive do so because their specific behavior has reduced their susceptibility to this reproductive risk. The theory is also based on basic or "primal" activities associated with early man, and does not account for present-day societal norms, guidelines or limitations. An effective specific example demonstrating risk associated with reproduction can be seen in the course of pregnancy in females.

When one considers the obstacles to survival, such as disease, starvation and predation that man has had to overcome in order to thrive, particularly in prehistoric times, women were at a significant disadvantage to men. This was particularly true from a reproductive perspective. In the generation of offspring, pregnant females carried their babies from conception to birth, a process that clearly put females at survival risk over the course of nine months (the typical gestation period prior to human childbirth). Given that the state of pregnancy exposed women to additional challenges to achieve suitable nutrition, to escape potential predators and to avoid disease, the survival risk of pregnancy was considerable. Conversely, while males were

necessary to initiate the reproductive process, they were not subjected to significant alterations in their physical state or capabilities and were not subjected to long-term survival risks in contrast to their female counterparts.

Another means by which reproductive risk can be evaluated is by the concept of investment.[5] For males, reproductive investment is relatively low compared to females. While he may be susceptible to predation and/or disease associated with reproductive activity, the risk is not only low but also very short-lived (*i.e*. only during sexual activity). In contrast, reproductive investment by females is very high. Because the female carries a baby to term from conception to birth and is also primarily responsible for feeding and protecting her baby to the point where it is self-sufficient, she invests considerable time and assumes substantial reproductive risk on this activity. Going back to the basic definition of genetic success, females are inherently at a significant disadvantage compared to males because they can only generate offspring at a finite frequency (dictated by the timeline of gestation, birth and development of her offspring). In contrast, males can theoretically generate offspring several times in a given day, assuming that they can find multiple willing female partners.

The concept of reproductive investment contributes to an interesting aspect of the theory of genetic advantage.[5] Because females contribute significantly more reproductive investment to the generation of offspring compared to their male counterparts, the theory of genetic advantage postulates that females tend to be very selective in picking a mate with whom to produce offspring in order to maximize its genetic advantage and maximize the likelihood of not only its survival but also its ability to generate its own offspring (recall that this is the definition of genetic success). The female chooses a mate that she perceives has superior genetic attributes because her mate will be contributing 50% of the genetic material to the offspring for whom she

will be responsible during gestation and development. By choosing a mate that will contribute to generating offspring with superior genetic characteristics, she will reduce her investment or reproductive risk.[5]

Interestingly, females choosing potential male mates with superior genetic attributes has a negative impact on male reproductive risk or investment. In order to contribute to the generation of offspring, males must devote effort (that they would otherwise apply to promiscuous behavior to maximize genetic transfer to offspring) into demonstrating characteristics that are considered attractive to the female in order to be able to contribute to the generation of offspring and ensure that his genetic makeup is contributed to successive generations. Ultimately, the female reduction and male increase in reproductive investment is a compromise where both sexes have greater equality in transferring their genetic attributes to subsequent generations.

In “The Selfish Gene”, the concept of altruism (from a genetic perspective) is also discussed and a convincing argument is presented that indicates that altruistic behavior is counter-productive to achieving genetic success.[4] At a very basic and primal level, altruistic activity decreases the ability or effectiveness of genetic transfer to offspring through reproduction. A specific example that demonstrated this point was the description of prehistoric male partners providing protection and food for their female partner and child. On one hand, the food and protection provided by the father increased the likelihood that the child would survive and thrive to generate his own offspring (and thereby contribute to both its mother’s and father’s genetic success). On the other hand, the time and effort required by the father to provide food and protection to his single offspring could potentially be better utilized in finding additional multiple female partners with whom to generate several more offspring. This description was provided as a primal example of human behavior and does not consider the moral implications of

males seeking multiple female partners to maximize the generation of the largest number of offspring possible.

At first glance, there appears to be very little in common between a "selfish" theory of population genetics and the precepts of the Ancient Accepted Scottish Rite (AASR). Before addressing that question, a brief synopsis of the AASR will be reviewed. The Scottish Rite Northern Masonic Jurisdiction website prominently displays its definition: "32˚ Scottish Rite Freemasonry™ is a fraternity of Brothers committed to going deeper into the highest principles, teachings, and ideals of the Masonic craft. It is open to all Master Masons looking to continue the journey of self-discovery and finding a deeper sense of purpose."[6] The organization is driven by the following mission statement: "We will strive to be a fraternity that fulfills our Masonic obligation to care for our members.[6] Scottish Rite Masons are also guided by several core principles, and are explained as follows:[7]

> "32nd Degree Scottish Rite Masons live by six core values: Integrity, Justice, Service to Humanity, Tolerance, Reverence for God, and Devotion to Country. These Core Values unite us in a quest to become better men and better Masons. In accordance with these values, members seek to:
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> - Aid mankind's search for identity and destiny in God's universe
> - Produce wiser men in a wiser world, happier men in a happier world, and therefore better men in a better world
> - Promote the dignity of every person and the humanity in all activities"

One underlying theme supporting the overall philosophy of the AASR is that of altruism, where the welfare of its collective membership is paramount in achieving the goals of the

organization. While all of the six core values rely on a man's altruistic nature, the core values of service and devotion to Country are particularly reliant on the concept of altruism. The 23rd degree (Knight of Valor) very effectively exemplifies the core value of service and its association with altruism.[8] In this degree the four Chaplains, who are crew members on the ill-fated *U.S.S. Dorchester* give the ultimate personal sacrifice in addition to providing spiritual counsel to the rest of the ship's crew. The ship is attacked by a German submarine and is struck by a torpedo – resulting in the command to abandon ship. As the ship is sinking and the crew is manning lifeboats, the Chaplains hand out life preservers without regard for saving their own lives. They ultimately gave their lives so that four other sailors could be saved.

Altruism is also effectively demonstrated in the allegory of 32nd degree (Sublime Prince of the Royal Secret), which describes the moral and spiritual conflict of Constans.[9] In the degree, Constans desires to be knighted as a Sublime Prince of the Royal Secret and as part of his initiation is required to perform a vigil at the Holy Altar, where it is hoped God will hear his prayers to keep him loyal and true. During his vigil, Constans is tempted by several characters eager for him to abandon his moral and spiritual principles. In the end, he does abandon his vigil, but does so in order to fight off an assault on his city. While fighting off the assault, Constans is killed. In the aftermath of the battle, it is believed that Constans abandoned his vigil for selfish reasons, but once his body is discovered, it is appreciated that while he did abandon his vigil, he did so to protect his fellow citizens. It is then determined that Constans acted honorably despite not completing his vigil as instructed, and that his actions were "true to the highest meaning and deepest spirit of his vow".[9] The actions of Constans were very altruistic in nature in that he sacrificed his own interests and well-being, and ultimately gave his life in the protection of

others. He did so in an environment where he could very easily have ignored the pleas for help from other around him and maintained his vigil to assure his eventual knighthood.

The predominance of altruism in the core values of the AASR appears to be in direct conflict with the compatibility of theory describing the basis for genetic success in population genetics. As mentioned above, this theory postulates that altruistic behavior is counter-productive to achieving genetic success. However, it should be noted that this theory is based on a basic assumption that human behavior driving reproductive activity is done so at a very primal level. This assumption is based on a simplistic "hunter/gatherer" model of male and female interaction.[4] In other words, it does not consider that higher sociological behavior can potentially contribute to defining the suitability of a sexual mate for generating offspring. This is a major limitation in this theory of population genetics success as described in *The Selfish Gene*.[4] When one considers modern-day human interactions at a more complex level, social interactions likely contribute significantly to genetic success, and assuming this consideration to be true, provides a strong basis upon which the core values of the AASR would contribute to this success, and to allow man to thrive.

Both genetic success models ("primal" versus "higher sociological") rely on the female selecting mates that will maximize the likelihood that their offspring will survive, thrive and produce its own offspring. The theory embracing sociological aspects in mate selection also takes into account that males assume more of the reproduction risk associated with generating offspring (compared to the more basic genetic success model reliant only on primal behavior) to assure their survival. In addition to the genetic contribution to generation of offspring during reproduction (*i.e.* contributing 23 pairs of chromosomes to the offspring), males also contribute

to an environment that can foster success of the development of the child. Males contribute to the availability of food, shelter, education and overall health of the child, which on one hand increases the reproductive risk of the male (from the perspective that he invests time and "effort" into maintaining a relationship with one mate and child at the expense of being able to generate more children with other partners). On the other hand, this additional contribution by the male partner reduces the reproductive risk of the female, and from a sociological perspective, makes the male a more attractive mate. By extension, the teachings of the core values of the AASR contribute to making males effective at contributing to a group environment, and therefore more attractive to their potential female reproductive partners. By teaching these values and having the Scottish Rite Mason embrace the tenets they espouse, the AASR enables men to be more successful at achieving genetic success, assuming the more complex theory of genetic success (considering a contributing sociological component) is accurate.

In conclusion, a theory of population genetics provides a basis upon which genetic success is defined. This popular theory relies on male and female behavior influenced solely by primal activities and as such, does not offer (or consider) a basis upon which the teachings of the Scottish Rite are compatible with this theory. However, modification of this genetic success theory to consider higher sociological contributors introduces opportunities to demonstrate compatibility with Scottish Rite teachings. The core values of the AASR, when embraced and practiced, arguably empower the Scottish Rite Mason to maximize their genetic success by contributing altruistically to society.

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