

Eugenics: how Francis Galton's life fostered the establishment of eugenics

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Introduction

The term *eugenics*, as coined by Francis Galton, "is the science which deals with all influences that improve the inborn qualities of a race; also with those that develop them to the utmost advantage"¹ In essence, Galton wanted to understand how human beings passed on and inherited genetic traits; specifically those traits relating to an individual's personality and intelligence. His main objective in seeking this understanding was so to identify, in his opinion what were, the desirable and undesirable genetic characteristics of human beings. Once he had identified what was desirable and what was undesirable, he could then try to eliminate the undesirable characteristics from the gene pool and reproduce more of the desirable ones. In order to achieve this, Galton proposed many plans that primarily sought to identify people who had desirable characteristics and compel them to have children while simultaneously identifying people who had undesirable characteristics and prohibit them from conceiving children. More elaborately, Galton wanted to bring humanity under a "social control that may improve or impair the racial qualities of future generations either physically or mentally"² It was this man that catalyzed the idea of eugenics, initiated the eugenics movement, and grew into something larger than just an idea.

The main purpose of this essay is to determine what factors in Francis Galton's life contributed to him founding and promoting the idea of eugenics. To achieve this, one must look in several different places. First, one must look broadly at Galton's life to see what factors in his upbringing and education contributed to the formation of his ideas. One must also investigate any written works such as his book, *Hereditary Genius*, and other publications to gain an insight into his thoughts. Investigating Galton's closest acquaintances: Karl Pearson and Charles Darwin provides another lens to analyze Galton's ideas. One should also discuss a motive. In this case the motive is simple: eugenics was Galton's attempt at modernity. Finally, one should look at any effects Galtonian eugenics had in other places in the world and on other individuals.

Child Prodigy to Traveling Bachelor

On every Monday closest to the full moon, an illustrious group of individuals consisting of scientists, engineers, philosophers, and industrialists would come together to share ideas and discuss new technologies. This group of intellectuals and elites was the epitome of an Enlightenment think-tank.³ It was through this group that Samuel Galton and Violetta Darwin first met. The two eventually married and had seven children. Their youngest child was born on February 16th, 1822 and they named him Francis.

It was clear from a young age, that Francis Galton was a bright boy with an, at times, almost self-destructive appetite for learning and reading. In his autobiography, Galton attributed his enthusiasm for learning to his family, "I acknowledge the debt to my progenitors of a considerable taste for science, for poetry, and for statistics"⁴ Since he was more intelligent than most children of his age he had a hard time socializing in school environments since no other five-year-

olds had ever read the *Iliad*.³ Throughout his childhood and young adult life, he attended many different schools and tried his hands at many different areas of study. His parents pushed him towards a career in medicine by setting him up with acquaintances to learn about the field of medicine at a young age.⁴ He first studied medicine at Birmingham General Hospital followed by Kings College.⁴ After a sabbatical from medicine to study mathematics at Cambridge, he continued his medical studies at St. George's Hospital until his father passed away in 1844.⁴ After his father's death, Galton received a large inheritance and described this as the moment that his life changed directions.⁴ At this time, Galton had become burnt out on his studies and with the inheritance money, spent most of the next few years traveling and exploring. On his travels he learned all he could about various subjects including geography, anthropology, and sociology; albeit rather informally. His travels took him all around Europe, the Middle East, and Africa. When his traveling days were over, Galton wrote a guide and survival skills book, *The Art of Travel*, for the traveling European Victorian in 1855; which still remains in print in the modern day.³ These days of travel contributed a significant amount of knowledge to Galton, especially on the subject of anthropology. On his travels, he came into contact with people ranging from academic scholars to tribal African subsistence farmers. It was during this time that he first began to notice and record the differences he saw in peoples' physical and mental attributes.

Revival of Quantitative Thinking

As Galton's bachelor days of traveling and exploring came to a close, his intrigue of theoretical science began. He had a unique approach to science in that he never read any other scientists' works or publications and approached a scientific conundrum in his own way. Since his ideas and methods were almost entirely original he stumbled upon things that other scientist never would have and had some successes. However, this also led to others viewing him as arrogant as he ignored some of the scientific rules of the time.³ It is during this time that Galton's passion for statistical calculations and quantitative measurement began to flourish. It appears in his publications, travel journals, and even his book *The Art of Travel*. An example of this can be found in one of his publications in 1858. While traveling in Northern Africa, Galton kept elaborate measurements and created detailed charts to track the amount of rations carried by man or beast, how meals were distributed within the group, and calculations trying to predict average distances traveled per ration.⁵

One of Galton's closest friends, Karl Pearson, contended that it was during his period of travel and exploration that Galton's love of science became rekindled while abroad and influenced him returning home to enter the world of formal education.⁶ Pearson also noted that Galton's obsession with statistics and quantitative measurement had increased while he was away.⁶ Being an incredible statistician, Galton was frustrated with the lack of quantitative methods used by anthropologists. Galton infused statistics into anthropology and his "methods gave [Anthropology] the status and dignity of a real science"⁶ The addition of quantitative methods helped to define the discipline of

Anthropometry, or, the study of physical characteristics of human beings to find variation. Galton's motives were two-fold. First, he wanted to study the physical characteristics of humans in a quantitative way that could be tracked over time. Secondly, he wanted to institute anthropometry back home in Britain. His over-arching goal was to detect if the British population's physique was deteriorating or improving. He addressed the latter by getting a number of British public schools to record the data of their students' age, height, and weight. This practice eventually spread to universities as well.⁶ Galton's focus on quantitative measurement and comparison between humans is one of the first areas where the beginnings of Galton's eugenic ideas are noticed. He wanted to be able to statistically point out physical differences within humans and also wanted to study the deterioration or advancement of the human physique, which is in many ways subjective. Galton also sought to influence the larger population through direct action. He wanted to be able to watch the youth of Britain so that if there were any, in his eyes, deteriorations in the physique, they could be addressed.

Publications of Note

During his travels, Galton spent a lot of time in existential thought about humanity, which he recorded in his travel journals. The information and knowledge he accumulated from his travels provided a basis for many of his writings. His journals contained reflections, copious amounts of notes, statistics, and anything he found interesting. A letter he wrote to the editor of *The Times* in 1873 showcases the accumulated knowledge from his journals. In this letter, Galton spoke of several different races and ethnicities and their "inferiorities" as he compared them to each other and the "Anglo-Saxon" race. He contended that Africans were mentally inferior, that the Chinese are living in a social dark age, and that Indians are inferior to the Chinese. His overall goal in this letter was to promote the idea that the Chinese should be moved to "the coasts of Eastern Africa if they were watched and judiciously diverted in that direction."⁷ In this one passage a few things are noticeable about Galton. First, we can see that he has interacted and is familiar with many different racial and ethnic groups, mostly from his travels. Secondly, Galton's ethnocentrism is rather blatant. Finally, we can see Galton publicly articulating a plan. Galton, as well as other intellectuals of the time, felt that Eastern Asia was becoming overpopulated. Galton came up with a plan to move the increasing populations of China to Eastern Africa and he implies that white Europeans should oversee the move. Although this article in *The Times* does not show Galton advocating for outright eugenics, it does give us an early example of his worldview that contributed to the development of his eugenic thoughts.

One of his first books, *Hereditary Genius: an Inquiry into its Laws and Consequences*, related to the subject of eugenics. The final edition of this book came out in 1892, and it was during this same time period that Galton started to become more outspoken about eugenics. In the preface of his book, Galton stated that during an ethnological inquiry he noticed that mental characteristics perpetuate themselves within families. The book then catalogues his study of four-hundred renowned men from several periods of history, their mental abilities, and their families. He identifies twelve categories of English men to study: Judges, Statesmen, Commanders, Literary Men, Men of Science, Poets, Musicians, Painters, Divines, Senior Classics of Cambridge, Oarsmen, and Wrestlers. In all, his book seeks to show how mental characteristics are passed down through generations to prove that genius is in fact hereditary. Looking at his own life, this must have made perfect sense to Galton. His siblings, parents, and grandparents were all exceptionally intelligent, so it

must have seemed only logical that intelligence was genetic just like height. The research he conducted and included in his book further solidified his view.

Galton's book, however, did not address any environmental factors such as the household one is raised in. Galton fails to notice that maybe his privileged upbringing around successful, intelligent individuals fostered similar traits in him rather than those traits being genetic. The book ended with the beginning of eugenics as Galton espoused the idea that humans possess the capability to control their own future through selective breeding.⁸ Pearson noted the same idea in his biography of Galton. He discusses how fascinated Galton became with the thought that humans had the capabilities and knowledge to improve themselves.⁹ This type of thinking is a major component of Galtonian eugenics. Galton's eugenic ideals built upon the thought that humanity can be improved through selective breeding. Galton just needed to determine what characteristics would be undesirable and how to go about excluding them from the gene pool.

The Plan for Eugenics

Galton's plan for eugenics was multifaceted. He initially wanted to establish eugenic laboratories. At these labs, humans would be studied on heredity, anthropometry, and health. Decisions about desirable and undesirable characteristics would be made as results were obtained. These findings were then to be published in journals and presented as lectures to the larger public to educate everyone on eugenics.⁹ Galton's rationale behind this was simple. He preached that we must have "the acquirement of eugenic knowledge before eugenic action." By this, Galton was trying to say that before anyone would want to promote, carry out, or go along with any eugenic plans, they first needed to be educated on the subject.⁹ He thought that the Eugenic Research Laboratories would provide the scientific backing for eugenics to become accepted as common knowledge. He also spoke about wanting to create a registry of families who have passed tests that certify their physical and mental prowess. This shows that Galton's main course of action in bringing eugenics to the world was through public education.⁹ He came up with a five-step procedure that he felt a society encouraging eugenics should enact:

- 1) Disseminate of a knowledge of the laws of heredity so far as they are surely known, and promotion of their further study.
- 2) Historical inquiry into the rates with which the various classes of society (classified according to civic usefulness) have contributed to the population at various times, in ancient and modern nations.
- 3) Systematic collection of facts showing the circumstances under which large and thriving families have most frequently originated.
- 4) Influences affecting marriage.
- 5) Persistence in setting forth the national importance of Eugenics.¹

This plan shows how Galton wanted to achieve his eugenic dreams. He wanted to put forth the idea of hereditary genius, classify people according to their social contributions, study and track large families in a catalog, understand and encourage specific marriages, and urge the national importance of eugenics. In this plan, Galton and his peers would have been the ones distributing information, collecting data, and carrying out research. This would have granted Galton and other eugenicists an enormous amount of power and control as they would have been determining how to measure and define civic efficiency as well as determine which families had the optimal genes to improve humanity. This plan encapsulates the essence of Galton's eugenic ideals. Galton even went so far as to ascertain that eugenics should "be introduced into the national conscience, like a new religion."⁹ However Galton's dream was never realized in Britain.

Pearson and Darwin

Galton had two notable close acquaintances who contributed to his views: his close friend and protégé, Karl Pearson, and his cousin, renowned naturalist, Charles Darwin. Pearson was Galton's closest friend over the course of his life. He was every bit as intelligent as Galton with a similar aptitude for statistics and a staunch supporter of Galton's Eugenics. He sums up his own take on Eugenics with this metaphor:

The garden of humanity is very full of weeds, nurture will never transform them into flowers; the eugenicist calls upon the rulers of mankind to see that there shall be space in the garden, freed of weeds, for individuals and races of finer growth to develop with the full bloom possible to their species.⁹

It is clear that Pearson agrees with and reaffirms Galton's idea of eugenics. Looking through their correspondences with each other it can be seen how close they were as friends, and how to implement their ideas through their discussions. Their correspondences provided a way for them to bounce ideas off of each other about eugenics and how to implement eugenics in the world. An idea that came across in one of Galton's letters to Pearson was a proposal for giving individuals a physical and mental test. This test would determine if they had the "desirable" genetic characteristics for reproduction. If they passed the test, they would be given a certificate stating they were "valid for hereditary transmission of qualities suitable to a citizen." Pearson responded to this idea by first confirming that it was a great idea. He pointed out some flaws, and then offered some ways by which they could improve upon it. Overall, Pearson fed off and reaffirmed many of Galton's views.⁹

Galton's relationship with Charles Darwin was different from that with Karl Pearson; whereas Pearson was Galton's close friend, student, and protégé, Darwin was his idol. Pearson described this relationship the best, "[Galton had] intense admiration for Darwin, which enforced and exaggerated respect for the authority of his judgment in individual instances."⁹ Galton describes the publication of the *Origin of Species* as a significant event in his intellectual development. Galton's thought about the book are important to note:

[I] devoured its contents and assimilated them as fast as they were devoured, a fact which perhaps may be ascribed to a hereditary bent of mind that both its illustrious author and myself have inherited from our common grandfather, Dr. Erasmus Darwin.⁴

Here, Galton attributes both his and Darwin's high intellect to their ancestors. This supports his belief in the notion of 'hereditary genius.' Galton states that *Origin of Species* is what prompted him to study the subject of heredity and attempt to discover if humans could in fact improve the race.⁴ Upon publication of *Hereditary Genius*, Darwin's high opinion and praise on the text was of upmost importance to Galton.⁴ Darwin did point out a few logistical flaws in Galton's plan and on the whole thought it would be difficult to implement. He pointed out that the plan would require an immense amount of work trying to decide who would be on the registry and he felt that too few people would even qualify to be on it in the first place.⁹ Galton was highly influenced by Darwin both on a personal and intellectual level. Darwin was even included in one of Galton's studies on hereditary intelligence.⁹ Their personal relationship helped build the respect they had for each other and this seeped over into their academic lives through letters to each other about their ideas. Galton was highly influenced by Darwin intellectually, and in many ways this influence helped pave the way for Galton's eugenics as Darwin's critiques only motivated him further.

Attempt at Modernity and Post-Galtonian Eugenics

Today eugenics is associated negatively with genocidal movements, such as the Holocaust (among many others), or as a consequence of totalitarian Communism, as exemplified in George Orwell's *1984*. Galton however, saw eugenics as a path to modernity for Britain. Galton's outlook on the effect of eugenics was that it would have many positive impacts on British society, "The general tone of domestic, social and political life would be higher. The race as a whole would be less foolish, less frivolous, less excitable, and politically more provident than now."¹ Galton felt that eugenics could act as a centripetal force in society by combining the idea of 'the individual' with the idea of 'the nation' to bring society together. At the end of his biography, Galton best explains why eugenics would bring society into modernity:

This is precisely the aim of Eugenics. Its first object is to check the birth-rate of the Unfit, instead of allowing them to come into being, though doomed in large numbers to perish prematurely. The second object is the improvement of the race by furthering the productivity of the Fit by early marriages and healthful rearing of their children. Natural Selection rests upon excessive production and wholesale destruction; Eugenics on bringing no more individuals into the world than can be properly cared for, and those only of the best stock.⁴

In addition to this, Galton felt that any civilized nation would adopt the principles of eugenics and apply them to their society. It is clear that Galton felt the next logical step for a nation or society to enter into modernity is through the practice of eugenics.⁴

Francis Galton passed away on January 17th, 1911, but eugenics lived on. As his idea began to spread Galton remained the "patron saint of Eugenics."² This alludes to his vision that eugenics would evolve into something of a religion, so it would be only natural that he be its representative saint. Galton and his ideas impacted many people. The person whom he most influenced was Karl Pearson. Pearson began his career as Galton's Ph. D. student but, as shown earlier, became a successful scientist and scholar in his own right. Another person who Galton had a large impact upon was the American Charles Davenport. Davenport was a staunch supporter of eugenics in the U.S., although his views and methods varied somewhat from Galton's. His overall concern was with preventing the undesirables to enter the gene pool by doing things such as supporting selective immigration policies.² Galton, Pearson, and Davenport were the three most prolific figures from the early days of eugenics.

There were also countless groups and associations that were organized around eugenics. The Eugenics Laboratory and the Eugenics Education Society were two of the early places where eugenic research took place. One was founded by Galton and he ran the other.¹⁰ *The Eugenics Review*, an academic journal, began in 1909 and continued until 1968. The American Eugenics Society was founded twelve years after Galton's death in 1923. Even international groups like the International Federation of Eugenic Societies formed. Overall, we can see that Galton and his eugenic ideas had impacts far outside his own circle as groups formed within other nations and internationally as well.

The last impact that eugenics has had on the world are numerous social and political movements that have had negative outcomes. The Holocaust in Nazi Germany was an atrocity committed that was based on the same principles espoused by Galton. Adolf Hitler adopted eugenic policies to help prevent, what he perceived as, the degeneration of the German nation.¹¹ He and his advisors felt that many groups posed a threat to Germany's future and subsequently sought to purge them

from the gene pool. This resulted in the killing of over twelve million people, six million of whom were Jewish. Another example is the compulsory sterilization laws that were passed in the U.S. The first such law was passed in Indiana in 1907 which began “the involuntary sterilization of any habitual criminal, rapist, idiot, or imbecile committed to a state institution and diagnosed by a physician as ‘unimprovable.’”¹² Following this first law, other similar laws were passed around the country. These laws disproportionately impacted women, and in many cases, women of color. South Carolina demonstrated this in 1956 where all twenty-three forced sterilizations carried out were on African-American women.¹² Galton’s eugenic idea that humans can control and manipulate their gene pool laid the groundwork for these actions and other similar actions to be carried out.

Conclusion

Multiple factors and facets of Galton’s life helped to mold a conglomeration of his ideas into what he eventually called eugenics. Galton’s main theory, which was encapsulated in eugenics, was that intelligence and mental characteristics are hereditary. Galton felt he proved this theory through all of his research. But, what Galton leaves out of his theory are the environmental impacts on an individual’s mental and physical development. It seems almost ironic that we can gain such insight into understanding how Galton came to his conclusion about eugenics looking almost solely at the environments surrounding him throughout his life. While his intellect is what enabled him to achieve so much in his lifetime beyond founding eugenic thought, it was the environmental circumstances throughout his life that fostered that intellect. This conclusion is further supported by looking at how he was raised, who he was raised by, where he was able to travel as a young adult, and who he associated with throughout the

course of his life. Galton’s main course of action for promoting eugenics was through education. He published numerous books, wrote articles in newspapers and magazines, and gave lectures. Galton did this because he felt the key to eugenics becoming an accepted ideology lied within it becoming part of the social consciousness. Francis Galton’s life is an excellent example of how one person and their idea can evolve into something much larger than themselves.

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The “Conscientious Guinea Pigs”: How conscientious objectors contributed to medical science during World War II and beyond

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Introduction

World War II is often described as the “good” war – the United States’ least controversial participation in any war.¹ And yet, among the almost eleven million men who were drafted by the Selective Service System (SSS)² were about 12,000 conscientious objectors (COs) who refused any kind of military service, even as non-combatants, because of their religious, ethical, or moral beliefs. Instead, they spent the war years in Civilian Public Service (CPS) camps, where they performed “work of national importance,”³ working for the Civilian Conservation Corps,⁴ on dairy farms, in mental hospitals, on a variety of civilian projects, including as firefighters and smoke-jumpers, who parachuted in to combat forest fires.⁵ A small group of about 500 COs also volunteered for medical tests, which involved depriving them of proper nutrition, infecting them with exotic diseases, and exposing them to harsh environments.⁶ Although small in number, through their participation in the experiments, these “Con-

scientious Guinea Pigs”⁷ significantly contributed to modern scientific knowledge and medical progress. The experiments yielded many useful results, including a better understanding of the human body’s reaction to environmental factors; ground-breaking research of the physiological and psychological effects of malnutrition, which led to further study of the relation between nutrition and disease; the discovery of new treatment drugs for a variety of diseases, such as typhus, pneumonia, and malaria; and the development of new scientific investigative techniques and instruments.

In addition, by serving the war years in CPS camps and participating in dangerous medical experiments, the COs had refuted many of their initial critics’ assertions that they may be, in Truman’s words, “plain cowards and shirkers.”⁸ Toward the end of the war, when the government released information about the medical experiments, the news media extensively covered the story, portraying the COs as brave men who were committed to both their country and mankind. After the war,