

Spring 2016

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Recommended Citation

Baltrimaviciute, Auguste (2016) "Karl Marx and the Making of the Modern World Looking at the Problem of Scientific Bias from All Engels," *ESSAI*: Vol. 14 , Article 10.
Available at: <http://dc.cod.edu/essai/vol14/iss1/10>

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Karl Marx and the Making of the Modern World
Looking at the Problem of Scientific Bias from All Engels

by Auguste Baltrimaviciute

(History 2820)

Many people view science as the field of study that provides the world with hard facts and unquestionable truths free from bias, but that is not the case. People are born into a society that shapes who they become, and in turn, they shape their society. Scientists are no different. Frederick Engels affirmed, “one is always conscious of the necessary limitation of all acquired knowledge, of the fact that it is conditioned by the circumstances in which it was acquired” (Engels, *Ludwig Feuerbach and the End of Classical German Philosophy*). When looking at the history of science, it is important to note that it’s affected by the actions and ideas that have developed up until that point. Influenced by the society of their time, philosophers and scientists attempted to justify the oppression of people deemed inferior by using Malthus' Iron Law of Population, eugenics and physical anthropology.

Political thinker and economist Thomas Robert Malthus wrote the *Essay on the Principle of Population* in order to analyze the rapidly expanding population in England. He published the essay in 1798, just prior to the peak of the Industrial Revolution. His reasoning behind the growth was that people in the lower classes were having too many children, which is also why he believed they were responsible for being poor. This would increase poverty and dependency on the state for assistance. Malthus did not attribute their lower economic status to the fact that the capitalists were exploiting their labor. Frederick Engels explained that in *Conditions of the Working Class in England*, fifty years after Malthus published the first edition of his essay, when the Industrial Revolution was at its peak. He wrote, “the middle-classes intend in reality nothing else but to enrich themselves by your labour while they can sell its produce, and to abandon you to starvation as soon as they cannot make a profit by this indirect trade in human flesh” (Engels, *Condition of the Working Class in England*). This shows that the working class and the bourgeoisie had directly opposing interests. For the bourgeoisie, it was to make as much profit as they can from the labor of the working class. Malthus, because he was part of the bourgeoisie himself, dismissed any wrongdoing by his social class and instead condemned the working class.

In order to curb the increasing population, he believed in positive and preventative checks. Preventative checks meant encouraging practices such as abstinence in order to lower birth rates. Positive checks were things like war and disease, which increased death rates. He particularly focused on the lower class of people, who he believed were at fault. He stated:

Instead of recommending cleanliness to the poor, we should encourage contrary habits. In our towns we should make the streets narrower, crowd more people into the houses, and court the return of the plague. In the country, we should build our villages near stagnant pools, and particularly encourage settlements in all marshy and unwholesome situations. But above all, we should reprobate specific remedies for ravaging diseases; and those benevolent, but much mistaken men, who have thought they were doing a service to mankind by projecting schemes for the total extirpation of particular disorders. (Malthus 465-66)

This was an example of a positive check that would reduce the number of people. By overcrowding

poor neighborhoods and discouraging access to medication and treatments, Malthus thought that the overpopulation of the poor would be remedied. The fact of the matter was that these awful conditions were soon realized. A government commissioner described the living situation of hand-weavers:

I did not believe until I visited the wynds of Glasgow, that so large an amount of filth, crime, misery, and disease existed in any civilised country. In the lower lodging-houses ten, twelve, and sometimes twenty persons of both sexes and all ages sleep promiscuously on the floor in different degrees of nakedness. These places are, generally, as regards dirt, damp and decay, such as no person would stable his horse in. (Engels, *Condition of the Working Class in England*)

While both Malthus and Engels were discussing the same situation, they came to radically different conclusions. The reason for that is because they were looking at it from the perspective of different classes. Engels saw the dreadful conditions as being the fault of exploitation by the bourgeoisie. Malthus put the responsibility on the working class for their own poor conditions instead of the societal conditions that forced them into that position.

Ferdinand Lassalle later applied Malthus' idea on population, which was called the Iron Law of Population, in order to formulate his Iron Law of Wages. It supposed that wages will never go above the minimum amount needed to survive because there will always be a surplus of workers. Frederick Engels reiterated this, "on average the workers receive only the minimum wage because, according to the Malthusian theory of population, there are always too many workers (such was Lassalle's reasoning)" (Engels, *Critique of the Gotha Programme*). Karl Marx proved this theory to be incorrect. He reasoned that the worker produces surplus value, which is the value added to a commodity through the labor power of the worker. After giving the worker his wages, the capitalist then appropriates that surplus value for himself. By demanding them, the workers can actually obtain higher wages, which would come from the surplus value created by them, disproving Malthus.

Malthus' ideas on population did not just influence the field of economics but also science. His controversial essay helped Charles Darwin come up with a general basis for his revolutionary theory of natural selection. Darwin noted this in his autobiography:

In October 1838, that is, fifteen months after I had begun my systematic inquiry, I happened to read for amusement Malthus on *Population*, and being well prepared to appreciate the struggle for existence which everywhere goes on from long-continued observation of the habits of animals and plants, it at once struck me that under these circumstances favourable variations would tend to be preserved, and unfavourable ones to be destroyed. The results of this would be the formation of a new species. Here, then I had at last got a theory by which to work. (Darwin 120)

The theory suggested that traits that increased the adaptability and survival of a species were passed on more often, while ones that did not possess those traits were wiped out over time. While Darwin was clearly impacted by Malthus, he did not apply his own theory of natural selection to people. Many others still used it in order to explain human behaviors as scientific facts instead of results of social conditions. The term "Social Darwinists" came about later to describe people who thought that way. By applying natural selection to humans, it was believed that it was possible to improve the human species overall.

It was actually the cousin of Charles Darwin, Sir Francis Galton, who after being greatly inspired by the theory of natural selection formed a concept that he called eugenics. It used genetics to explain how positive traits in humans could be passed on in order for them to increase in the following generations. The cause of these traits was seen as being a genetic one instead of something

that was perpetrated by social relations. Eugenics deduced that discouraging people considered bad and encouraging people considered good to pass on their traits could eliminate undesirable traits within several generations. What is defined as “good” and “bad” is highly subjective, meaning that the traits themselves were subjected to the influences and ideas of their time and were not verifiable and objective truths. Eugenacists focused a lot on behavioral traits, which included “feeble-mindedness”, pauperism, alcoholism, and many others. This shows that the lower class of people was seen as genetically inferior because they often possessed these traits due to their conditions.

There were also two types of eugenics: positive and negative. Positive eugenics encouraged people with favorable traits to reproduce. Usually those people were middle or upper class white Americans. Negative eugenics discouraged (and sometimes forced) people with unfavorable traits from reproducing, many of which were poor and/or people of color. The 1927 Supreme Court ruling in *Buck v. Bell* made that easier. Written by Oliver Wendell Holmes Jr., it upheld a Virginia law allowing forced sterilizations of people seen unfit to reproduce. Holmes famously said, “three generations of imbeciles are enough”, indicating motivation from the eugenics movement (Buck). The ruling paved the way for other states to enact such laws. It is estimated that about 20,000 forced sterilizations were performed in California, the state with the highest amount in the country. Journalist Lisa Ko stated, “while California’s eugenics programs were driven in part by anti-Asian and anti-Mexican prejudice, Southern states also employed sterilization as a means of controlling African American populations” (Ko). Targets of negative eugenics changed with time and place, depending on the conditions present. Eugenics was not the only scientific field that was highly susceptible to preexisting ideas that affirmed the status of the ruling class.

During the 19th century when the country was expanding westward at the expense of many native peoples and ownership of black slaves was common, the field of physical anthropology was very popular in the United States. It was the science that divided people into racial categories in order to support the idea that some races were inferior to others. There were two prevailing theories at the time: monogeny and polygeny. Monogeny was the theory that humans descended from a single source, which was thought to be Adam and Eve at the time. Because of varied physical conditions, different races emerged. Polygeny suggested that the races originated from different ancestors entirely. Louis Agassiz, a famous polygenist, explained, “there are upon earth different races of men, inhabiting different parts of its surface, which have different physical characters; and this fact . . . presses upon us the obligation to settle the relative rank among these races, the relative value of the characters peculiar to each, in a scientific point of view” (Agassiz 141-142). So not only was it thought that the races came from different sources, but they should also be ranked. It was The American School of Anthropology, to which Agassiz was a part of, which took the position of polygeny.

Another prominent scientist in the school was Samuel George Morton. Having an extensive collection of human skulls, he was an expert in craniometry, or the study of skull size. He believed that a larger skull meant that a larger brain had to encompass it therefore the person was more intelligent. He also believed that a skull belonging to a white man would be bigger than one belonging to a black man. To test out his hypothesis, Morton filled the skulls with pellets to see how many would fit in order to measure their volume. He wanted to find quantitative proof that there is an inherent and biological difference between the races. His data concluded that there was a difference in the sizes of skulls belonging to black and white men. *The Charleston Medical Journal* commended him on his findings, “we of the South should consider him as our benefactor, for aiding most materially in giving to the negro his true position as an inferior race” (Stanton 141). This meant that now there was finally academic and quantitative proof that could be used to rationalize the use of slavery.

Writer and medical doctor Oliver Wendell Holmes Sr. also applauded the discovery. In a letter to Morton he wrote:

The more I read on these subjects, the more I am delighted with the severe and cautious character of your own most extended researches, which, from their very nature, are permanent data for all future students of Ethnology, shoes leader on this side of the Atlantic, to say the least, you have so happily constituted yourself by well-directed and long-continued efforts. (Gossett 58-59)

It's important to note that he was the father of Oliver Wendell Holmes Jr., the Supreme Court Judge who ruled in favor of forced sterilization in *Buck v. Bell*. This shows how these ideas were passed on and continued.

While Holmes praised Morton on the “cautious character” of his research, something didn't seem quite right to 20th century evolutionary biologist Stephen Jay Gould. After looking at his data, Gould stated, “Morton's summaries are a patchwork of fudging and finagling in the clear interest of controlling a priori convictions. Yet – and this is the most intriguing aspect of the case – I find no evidence of conscious fraud; indeed, had Morton been a conscious fudger, he would not have published his data so openly” (Gould 54). He unintentionally came to the conclusion that he wanted to because of his own bias.

Another anthropologist who studied craniometry was Robert Bennett Bean. Instead of measuring the volume of skulls like Morton, he measured and charted the length of the genu and the splenium of the brain, assuming that a larger genu meant greater intelligence. He concluded, “the genu of the corpus callosum is smaller in the Negro, both actually and in relation to the size of the splenium” (Bean 27). A mentor to Bean, Franklin P. Mall, decided to recreate and repeat his experiment in order to test its accuracy. Except this time, he didn't know which brain belonged to which race. He concluded that there actually isn't a difference in size of the genus between black and white brains, which proved Bean's partiality while performing his original experiment. Both Bean and Morton's investigations were in line with the ideas present at the time.

French psychologist Alfred Binet also briefly studied craniometry, but came to the realization that head sizes did not differ much between intelligent and not intelligent people. While his focus shifted from craniometry, he continued to study intelligence. Prompted by the Minister of Public Education, Binet, along with a colleague, came up with the Binet-Simon scale to test and rank the “mental age” of school children to see if they needed extra help to improve. He also warned about limitations of the test, “this scale properly speaking does not permit the measure of the intelligence, because intellectual qualities are not superposable, and therefore cannot be measured as linear surfaces are measured” (Binet and Simon 40). Binet realized that intelligence cannot be quantified. Others did not see it that way.

Unfortunately, Binet's test was used in ways he did not foresee. Eugenicist Henry Herbert Goddard translated it to English and used it to determine if immigrants that were coming in on Ellis Island in the early 1900's were “feeble-minded”. It was definitely not Bine's intent for his test to be used in that way. When discussing the development of history, Engels stated, “the ends of the actions are intended, but the results which actually follow from these actions are not intended; or when they do seem to correspond to the end intended, they ultimately have consequences quite other than those intended” (Engels, *Ludwig Feuerbach and the End of Classical German Philosophy*). This means that while it was Binet's intention to create a test that could help address intellectual problems in children, he did not realize that it would be used in such a way that it was.

Goddard would have women administer the test to people who had just entered the United States to test their intelligence. This lead to the following results: “83 percent of the Jews, 80 percent of the Hungarians, 79 percent of the Italians, and 87 percent of the Russians were feeble-minded –

that is, below age twelve on the Binet scale . . . Eventually, Goddard monkeyed about with the tests, tossed several out, and got his figures down to 40 to 50 percent” (Gould 166). The incredibly low scores of these immigrants could have been attributed to many factors including the fact that they just completed a long and stressful journey across the Atlantic Ocean, their inability to speak English, lack of formal education and others. While he somewhat acknowledged that, Goddard still came to the conclusion that these immigrants were inherently unintelligent. Many people also resented immigrants from those countries because they were driving down the wages of other workers since they would often work jobs that paid less. Given the time period when he was performing these tests, one can see a reflection of the sentiments felt toward those people.

Scientific ideas such as physical anthropology, eugenics and Malthus' Iron Law of Population tried to defend the oppression of people thought to be inferior and confirmed the place of the ruling class in society as natural. While many of those ideas were eventually proven to be incorrect, they were a product of their circumstances. Engels stated, "the great thinkers of the 18th century could, no more than their predecessors, go beyond the limits imposed upon them by their epoch" (Engels, *Socialism: Utopian and Scientific*). The scientists behind these ideas were not free from the influences of their society and class status.

This Marx the end of my paper.

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