Introduction

The blending of the races has been blamed for much of the distortion and defects in body form in our modern generation. It will be seen that these face changes occur in all the pure blood races studied in even the first generation, after the nutrition of the parents has been changed [4] (Figure 1).

Figure 1: Weston A. Price Nutritional and Physical Degeneration (1939).

This paper examines the work of Weston A. Price through the prism of Medical Anthropology. Medical Anthropology examines attitudes and beliefs about health that contribute to a given society or group of individuals' practice of medicine, the implementation of public policy, and the promotion of health reform and advocacy [3]. The cultural and historical examination of a particular view of medicine can often offer insights into past medical practices and procedures, as well as new perspectives on currently held beliefs about health.

In order for medical anthropology to be effective, the investigator must engage in vigorous research in an attempt to understand a world-view that may seem foreign in terms of popular or currently held beliefs. The case of Weston A. Price offers a prime example of this.

The works of Price, an amateur anthropologist and early 20th Century founder of holistic dentistry, have been widely examined and often criticized. Much of that criticism has been based on his advocacy of animal fats as necessary for optimal health. Weston A Price's writings have gone on to influence major schools of alternative medicine including holistic dentistry, chiropractics, osteopathy, nutrition, and naturopathic medicine, along with the writings of well known alternative health care physicians such as Joseph Mercola [5,6].

Price had begun travelling and collecting data as an amateur ethnographic researcher in the early 1930's, studying several isolated communities in remote areas of Switzerland, Scotland, Alaska, Polynesia, and Africa and many others. His work examined what he termed the traditional diets of "primitive persons" [1] in an attempt to understand the origins of disease at a time when many academics believed the civilized world was collapsing due to "race-mixing" [2]. Price made note of extreme malformed dental arches and an increase in the number of tooth carries in people who ate processed foods. He also documented an increase in tooth decay in those persons who abandoned traditional diets and chose processed foods instead. This paper, however, examines the historical and cultural influences that shaped Price's theories.

Abstract

Objective: The objective of this paper was to re-examine the work of the early Twentieth-Century-the founder of holistic dentistry and amateur anthropologist-Weston A. Price, through the prism of Medical Anthropology. Price's theories about diet and nutrition have been analyzed and criticized predominately because of his advocacy of a controversial diet rich in meat, raw dairy, and animal fat but no thorough research paper has examined Price's views from a medical anthropological perspective. Price had begun traveling and collecting data as an amateur ethnographic researcher in the early 1930's, studying several isolated communities in remote areas of Switzerland, Scotland, Alaska, Polynesia, and Africa and many others. His work examined what he termed the traditional diets of "primitive persons" [1] in an attempt to understand the origins of disease at a time when many academics believed the civilized world was collapsing due to "race-mixing" [2]. Price made note of extreme malformed dental arches and an increase in the number of tooth carries in people who ate processed foods. He also documented an increase in tooth decay in those persons who abandoned traditional diets and chose processed foods instead. This paper, however, examines the historical and cultural influences that shaped Price's theories.

Design: Weston A. Price's work and writings were analyzed in relationship to commonly held medical and cultural views during the early half of the Twentieth-Century. In addition to Price's own writings, a thorough investigation was done that examined how cultural views about health, race, gender and class in the early Twentieth-Century shaped public policy, health reform and advocacy [3].

Conclusion: Weston A. Price was heavily influenced by eugenics theory and popularly held beliefs about diet and nutrition. These views went on to influence and shape his thesis about proper health and nutrition.
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Price was convinced that nutritional deficiencies caused tooth decay and malformed dental arches (leading to the over-crowding of teeth), and even the world-wide spread of epidemics like polio and tuberculosis. He also argued that improper nutrition could impact moral behavior and lead to criminality [7].

Price has received criticism for the standards and techniques he used in data collection during his ethnographic research, and for the far-reaching conclusions he made based on minimal or questionable evidence [8]. Regardless, his work has rarely been viewed through an historical and anthropological lens. This is a great disservice to both Price’s work and his legacy; a legacy that continues to live on through the efforts of The Weston A. Price Foundation and the Price-Pottenger Foundation [9,10].

Price’s research is best understood only after a thorough examination of the culture and times in which he lived and wrote. This includes an examination of commonly held medical and scientific views about disease and nutrition at the time he conducted his research, as well as popularly held beliefs at the time about race and intermarriage that had a tremendous impact on public health policies. For Price, this meant writing at the height of the American eugenics movement, which sought to control the reproductive rights of persons deemed “unfit to breed” [11] and to encourage the reproduction of persons deemed genetically superior.

At the time of publication of Price’s most famous work, Nutritional and Physical Degeneration, eugenics as a movement had already shaped public policies in the United States, leading to tens of thousands of forced sterilizations and dramatic restrictions in existing immigration laws. Price was quite familiar with eugenics and had read many works by its most enthusiastic advocates. He admired these advocates greatly and referenced them often, both bolstering and challenging their ideas in order to defend his own thesis [12]. In addition, popularly held views about sound nutrition at the height of the American Great Depression would also have a profound effect in shaping Price’s views about health.

Getting to Know Weston A. Price

I have been conscious of an opportunity for helpfulness to the members of the various primitive races that I have studied and who are so rapidly declining in health and numbers at their point of contact with modern civilization. Since they have so much accumulated wisdom that is passing with them, it has seemed important that the elements in the modern contacts that are so destructive to them should be discovered and removed [13].

In the early 1930’s, a family dentist practicing in Cleveland, Ohio attempted to discover why so many of his patients were becoming sick. He had seen a disturbing rise in the number of reported cases of tuberculosis, polio, learning disabilities, and tooth decay. At the height of the Great Depression, the United States seemed to be facing a national health crises; one that could potentially weaken an already bankrupt nation. What was wrong? And why were so many Americans suffering from such poor health?

Advocates of eugenics certainly had their theories, and Price was well acquainted with them. There was nothing unusual about this – such views had become wildly popular in the United States, influencing how Americans practiced medicine and shaped public policy. And while eugenics began as an English import, it soon took hold in the United States with the help of Harvard biologist Charles Davenport, who was fiercely devoted to the writings of Francis Galton [14].

The Theory of Eugenics is Born

Born in 1822 and a cousin of Charles Darwin, Sir Francis Galton was an English aristocrat who developed his theory of eugenics after tracing the history of over a thousand members of his own family. He noted that while the poor continued to produce only the poor and uneducated, his own relatives were more accomplished. He concluded that some men were simply superior to others due to “a genetic makeup or ‘germ plasm,’ a type of genetic material that could be passed on from parent to child” [15,16].

Many of his ideas about inherited traits were developed after reading his cousin’s book Origin of Species, and his knowledge of the Mendelian Theory of Inheritance [17,18].

Galton had also spent a good deal of time studying the animal and plant domestication research that had become popular in England at the time. This led to his writing of Hereditary Genius: An Inquiry into its Laws and Consequences in 1869 [19]. Galton never considered Victorian views about class and its impact on social policies as having anything to do with why his own relatives had become so successful. Galton was also heavily influenced by the philosophy of physiognomy, and the work of Italian criminologist Casare Lombroso, which sought to determine a person’s character based on their physical features [20-22].

Galton’s promotion of physiognomy would have a strong influence on the British Victorian criminal justice system - British law enforcement of the time was working to develop a catalogue of facial features and associated criminal and deviant behavior based on the idea that criminals were born rather than bred [20].

Consequently, Galton spent a good deal of time measuring people, due to the importance ascribed to the length and proportions of various bodily features (he also helped develop the method of fingerprinting technology that is still used by law enforcement today). Years later, when Price collected data for his own research, he would take similar measurements, arguing that certain physical characteristics were associated with intelligence, health, or criminality [14].

Advocates of eugenics had two goals in mind. The first was to encourage those seen as “fit to breed” [23] to have children. The second was to prevent those people deemed “unfit” [20] or “defective” [24] from doing so. The unfit included those persons considered to be suffering from mental defects, as well as criminals, racially “inferior” [25] persons, or those with physical deformities.

The popularity of Galton’s theory of eugenics influenced medicine, public policy, marriage laws, immigration laws, and
even how intelligence is measured - he helped develop the Intelligence Quotient Test or I.Q test, which helped insure his own status as a "genius" [26].

Meanwhile, Charles Davenport, born in 1879, became active in bringing Galton's ideas to the United States through his work as a biologist at Harvard. Research into the theory of eugenics would be promoted by grants from institutions funded by some of America's most prominent citizens, including Andrew Carnegie of the Carnegie Institute, John D. Rockefeller Jr., of the Rockefeller Foundation, and Mary Harriman, widow of railroad magnate Edward Harriman [20].

By 1909, the first sterilization laws went into effect, and by 1927, the U.S Supreme Court ruled in Buck vs. Bell [11] that States had the right to sterilize people considered "mentally defective." [27] By the mid 1930s, the United States had engaged in the institutionalization and forced sterilization of hundreds of thousands of American citizens [28]. By the mid-1930's, when Price began writing his most famous work, Nutrition and Physical Degeneration, eugenics was so widely accepted that it was taught as a science at many of America's leading universities, including Harvard, Yale, Princeton, and Brown [29].

Price himself was born in 1870 in Newburgh, Ontario, in Canada, and graduated with a dental degree from the University of Michigan in 1893. By the time the Great Depression hit, Price had seen a wide variety of patients, who included poor persons and migrant farm workers. Conditions such as tooth decay, alcoholism, malnutrition, illiteracy, and communicable diseases, which would later be greatly reduced by public health programs, were common in Price's patient population. Diseases of malnutrition, such as Spina bifida, would begin to decrease as the American government began to play a more active role in promoting food fortification programs decades later [30].

Weston Price's Shifting View of Eugenics

Certain preconceived ideas may have to be modified, as for example that based on the belief that what we see is due to heredity or that deformity is due to mixing of races [2].

While he initially supported, and was influenced by, many of the ideas presented by eugenics, we can see that it was sometime around 1935, during his ethnographic studies, that Price began to question the validity of some eugenics theories about disease. Travelling to remote areas of Switzerland, the Scottish Isles, Polynesia, and Africa, he became convinced that the health of peoples he referred to as "primitive" [20] declined rapidly once their traditional diets were replaced with processed foods.

Price collected some 15,000 photographs, 4,000 slides, and numerous filmsstrips. He also took copious notes about indigenous diets, analyzing the nutritional value of native food based on what was known about vitamins and nutrition at the time. Price concluded that America's health crisis had more likely been what was known about vitamins and minerals necessary to maintain health.

However, influenced by the writings of eugenics advocates Earnest Hooton and Alexis Carrel, he still believed that physical defects were a sign of propensity for criminal behavior. Thus, while part of Price's work was a response and challenge to eugenics, and though he did not attribute physical degeneration to "race mixing" [32], he still retained an affinity for many of the movement's beliefs on race and criminality along with Hooton's race classification system.

Hooton himself wrote the forward to Nutrition and Physical Degeneration, writing, "I salute Dr. Price with the sincerest admiration (the kind that is tinged with envy) because he has found out something which I should like to have discovered myself" [33]. To have Hooton, a world renowned Harvard Physical Anthropologist and author of the book Men Apes and Morons [34], which examined the physical and moral decline of mankind, write the introduction to his own book must have seemed a unique honor to Price. Hooton also wrote and spoke extensively about the epidemic of tooth decay in modern society, arguing that it could eventually lead to human extinction [35].

Through the American Association of Physical Anthropology (AAPA) and National Research Council Association (NRCA), Hooton helped develop the Committee on the Negro. Along with Alex Hrdicka and Charles Davenport, he would argue that Africans were more primitive than Caucasians and drier in physical and mental capacity to apes (a type of race classification that Price seems to have accepted and never challenged) [36]. And like Galton, Hooton was a long time proponent of the ideas of Criminal Anthropologist Cesare Lombroso (1835-1909), who authored L'Uoma deliquente (Criminal Man) in 1895 [37].

Lombroso had worked to develop a complex filing system for law enforcement, convinced that a person's criminal nature could be determined based on specific physical characteristics alone [38]. Hooton would later go on to measure thousands of criminals in an attempt to show a correlation between body type and criminal activity, and Price would later draw on these same ideas when examining the photographs of convicted criminals in his own book Nutrition and Physical Degeneration [39-41]. Hooton's work helped solidify and justify racial stereotypes and methods of criminal profiling that would endure for decades [42]. But in hindsight, even this was not the most unfortunate of Price's influences.

Those who have murdered robbed while armed with automatic pistol or machine gun, kidnapped children, despoiled the poor of their savings, misled the public in important matters, should be humanely and economically disposed of in small euthanasic institutions supplied with proper gasses. A similar treatment could be advantageously applied to the insane, guilty of criminal acts [20].

Price quoted passages from Dr. Alexis Carrel's most famous work, L'Homme, cet inconnu (Man, The Unknown) both at the beginning and end of Nutrition and Physical Degeneration, and praised his work as "outstanding" [20]. Born in France 1873, Carrel was a Noble Prize winning vascular surgeon and biologist.
with honorary doctoral degrees from both Brown and Columbia University. He went on to work for both the Rockefeller Institute of Medicine and the University of Chicago. He maintained close ties with France’s pro-fascist French Popular Party until the liberation of France, and would later be charged as a Nazi collaborator, dying before his trial in November of 1944. He wrote L’Homme, cet inconnu [43], in 1935, and it became a best-seller. Like most proponents of eugenics, Carrel believed that the civilized world was facing an epidemic health crisis and financial collapse brought on by the unrestrained breeding of “defective” [44] persons at an alarming rate. In fact, he was so concerned that he went so far to suggest genocide, using “proper gasses” [45] to deal with the problem, a proposal that Price seems to have considered plausible.

Conclusion

If the individuals in our modern society who are sufficiently defective to require some supervision are in part or largely the product of an injured parentage, who should be held responsible? Is it just for society to consign these unsocial individuals which it has made to a life of hard labor or confinement in depressing environments? Is it just for society to permit production of physical and mental cripples? [46]

Price, as can be seen in retrospect, was able to make some significant strides forward in the science of diet and nutrition while at the same time remaining intellectually and emotionally bound to some of the most unpalatable claims and theories of the eugenics movement of the 19th and 20th centuries.

Most significantly, Price moved away from ideas of racial mixing (though he never rejected Hooton’s race classification system) by suggesting that it was actually “denatured foods” [47] and vitamin deficiency that were responsible for tooth decay. This may seem commonsensical now, but it had only been in 1921 that Fernando E.

Rodriguez Vargus (1888-1932), a major in the United States Army, had discovered a link between tooth decay and the bacteria Lactobacillus acidophilus [48]. And it was not until the Vipeholm experiments, conducted on patients at the Vipeholm Mental Hospital in Lund Sweden between 1945-1947, that a definitive link was shown between sugar and tooth decay [49].

The Vipeholm experiments, which were funded by the sugar industry, involved feeding copious amounts of candy to mental patients, and resulted in such severe tooth decay that many of the inmates lost most or all of their teeth in the process. The experiments would later be criticized for their countless ethics violations, [50] and it seems ironic in retrospect that the unwilling subjects of these experiments belonged precisely to one of the classes of undesirables as classified by the eugenics movement [51].

While the link between malnutrition and some birth defects has now been long-established, this information was not available to Price in 1939. For example the link established between folic acid and neural tube defects would only be discovered in 1964 (and folic acid was first isolated in 1941) [52]. And the role of alcohol consumption in fetal development and its role in the subsequent health decline of American native populations would not be seriously studied until decades later.

His views regarding meat and dairy closely mirrors the common views that existed at the time - during the American Great Depression, when these were considered healthy and wholesome foods, prized precisely because they were high in calories and viewed as symbols of prosperity and wealth [53].

It is easy to either laud Price as a visionary or dismiss him as a misguided quack - but the truth lies somewhere between these two views. Utilizing the science and research of his time, and influenced by a movement whose beliefs helped lead to the death, disenfranchisement, and suppression of literally millions, Price was nonetheless able to make significant strides forward in advocating for a view of health and nutrition that more closely resembles that of our own times. To dismiss him because of those influences, or to ignore those influences entirely, is in a way to rob Price of his greatest achievement.

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