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Pushing the Button:
The Hope and Fear of Electricity at the End of the 19th Century

"Is electricity life?" asked Henry Lake in an 1873 issue of *Popular Science Monthly* (Lake 721). As rapid innovations in electricity were being made by people all over the world at the end of the 19th century, this was the question on many a mind. How much would electricity change life as people knew it? What were its benevolent powers, and what were its destructive powers? Edward Bellamy viewed electricity as an essential feature of his idealized future society in his novel *Looking Backward*. One of the first things the protagonist, Julian West, notes upon awakening for a second time is the light in the room: "When I awoke it was broad daylight in the room, which had been lighted artificially when I awoke before" (Bellamy 18). This artificial light also appears in the public space of the future utopia. The public sidewalk coverings which have replaced the individual umbrellas are significantly "well lighted" (Bellamy 89). Bellamy saw the new powers of electricity as beneficial for all, creating new possibilities for life for the residents of the 20th century. This view is reflected in the attitudes about the Columbian Exposition of 1893, also called The Chicago World's Fair. Electricity was seen as changing humanity for the better, and creating new possibilities for the world. However, electricity also seemed to possess some frightening powers, especially in the use of the electric chair as the means of criminal executions. Electricity was not only capable of changing life, but ending it as well.

Electricity was by no means a new technology at the close of the 19th century. Various scientists and inventors had been tinkering with ways of to use electricity for well over a century. However, electricity, while known, was not practically understood until the end of the 19th century. As Elihu Thomson wrote in 1901 in *The Progress of the Century,* "In the preceding

century we find no evidences of the application of electricity to any useful purpose" (265). The uses of electricity were being reinvented, and in doing so, electricity was reinventing life as people knew it as well. Electric lamps, and new ways of connecting them in public spaces as well as private homes, were being created. There were numerous experiments with different kinds of electric currents. The telephone and telegraph were introduced. New dynamos were created which would have an immense effect on all other things associated with electricity, and would allow for further and more complex electrical inventions. The most significant feature of these new inventions and applications was that they were becoming available to the general public. These inventions were no longer isolated in laboratories, but were becoming integral parts of everyday life (Thomson).

In 1893, the world witnessed wondrous demonstrations of the life-changing powers of electricity at The Columbian Exposition. The Exposition was nicknamed "The White City" because of the expanse of lights used on the classical architecture of the buildings at the Exposition (Halstead 577). While there were many new developments exhibited at the fair, in buildings displaying such things as manufacturing and liberal arts, mechanics and machinery, agriculture, mining, and transportation, electricity was definitely the principal display. Murat Halstead wrote in *The Cosmopolitan* that "[i]t is all an electrical exhibit" (578), while Charles Lungren wrote in *Popular Science Monthly* that "[a]t the Columbian [Exposition,] [electricity] is omnipresent" (721). While electricity was certainly not the only exhibit at the Exposition, every exhibit included some component of electricity, including "lighting, incandescent lighting, electric power, telephone service, police signal service, fire alarm service, telegraph service, [and] electric transportation" (Halstead 578). The construction of the buildings relied on electricity, and the running of the exhibits relied on electric motors (Halstead and Lungren). The

sheer display of electricity was overwhelming, with "[n]early five thousand arc lamps and a hundred thousand incandescents" (Lungren 723).

The principle goal of the Exposition, while largely demonstrated through electricity in the attractions and exhibits, was far larger and more socially significant than these exhibits. The goal was to show the life-changing capacity of this new technology. Halstead remarks that "[t]he adaptability of electricity to the service of man has a daily development, and it gains immensely new territories of usefulness" (581). The effect of new developments and applications of electricity would be for a new and greater civilization, one which was evolving "out of the dark and into the light" (Van Brunt 577). The Exposition would serve to teach the people of the US and the world what kind of civilization they could have. The wonders shown at the Exposition

> tell for the ennobling education of humanity--the diffusion of knowledge, the broadening of the sympathies of communities--the better mingling of the country and the town, the elevation of the labors, the expansion of ambition, the illumination of mind and matter--all one broad, bright, generous, glorious advancement, awakening the dull, inspiring the despondent, cheering the broken, arming the weak for the greatest cause, that of the common good (Halstead 582).

The Exposition promoted the belief that the power of new technology, especially electricity, would bring a new life to the world and that "a new and equally brilliant era shall presently be begun" (Van Brunt 588).

This new age began with the push of a button. The Exposition was opened with a speech from President Cleveland, in which the *New York Times* quotes Cleveland as proclaiming that "[a]s by a touch the machinery that gives life to this vast exposition is now set in motion, so at the same instant let our hopes and aspirations awaken forces which in all time to come shall influence the welfare, the dignity, and freedom of mankind" (Opened). "As he pronounced the last word he touched the ivory button […] and the spark of electricity flew to do the President's bidding" (Opened). The power of electricity could be ignited with something as small as the push

of a button, and this immense power was one which would not only create hope and life as it did in the Columbian Exposition, but also one which might create fear and death.

Three years before the Columbian Exposition opened, the first execution performed by the electric chair took place at Sing Sing, near Auburn, New York, in 1890. The official method of execution in New York state was changed from hanging to the electric chair two years earlier in 1888 (Death). The two years between the passage of the law and the first execution involved some debate over the technology as well as the humaneness of the use the electric chair.

One uncertainty was "the amount of electromotive force which in all cases would prove fatal" (Power). No one knew for certain the answer. Also brought into question was whether electrocution was really a more humane way to die, or if it in reality caused more suffering than other forms of execution (Power). The courts of New York judged that electricity was indeed a powerful enough force to kill, and kill consistently. Just as the new life possibilities created from electricity during the Columbian Exposition were opened with the "touch of a button", the power of the electric chair could also be unleashed with the touch of a button. However, while this power could be unleashed so easily, the understanding of this power was still mysterious to many people in the late 19th century. "Stand by the electric chair. There sits a man in his usual health. No cause appears; but suddenly he dies […] If you do not know the divinity of law and the agency of law behind the act, it is just as much in the line of nature as when a thunderbolt leaps from the sky and strikes a house and kills a man" (Touching). People knew that electricity could be manipulated to kill, but were not entirely confident as to how this process worked.

It seems that the majority of people believed that execution by the electric chair was a more humane form of death than hanging. According to the *New York Times*, New York Governor David B. Hill's case for using the electric chair was stated as follows: "The present

mode of executing criminals by hanging has come down to us from the Dark Ages, and it may well be questioned whether the science of the present day cannot provide a means for taking the life of such as are condemned to die in a less barbarous manner" (Death). The innovations in technology, according to Governor Hill, should be used in all facets of life, or in this case, death, as a means to provide better and more advanced ways of life and death. New technology would be the force to drive mankind out of the “Dark Ages” and into the more civilized and promising world of the future.

The view of New York courts and officials, as well as members of the general public, was that the electric chair was more humane than hanging. But, in reality, the horror which would accompany the first execution of William Kemmler in Auburn, New York, on August 6, 1890, would be long remembered. The electric current had to be turned on twice, because the first shock, lasting under a minute, was not enough to kill Kemmler. The second shock lasted anywhere from 1 minute to 7 minutes, since witness accounts varied. During this time, "Blood began to appear on the face of the wretch in the chair […] The capillary or small blood vessels under the skin were being ruptured. […] [I]t was seen that the hair under and around the electrode on the on the base of the spine was singeing. The stench was unbearable" (Far). The observers of the execution were visibly shaken after it was over. The lethal powers of the electric current were debated before the execution of Kimmler, but it had been decided that the power of electricity could indeed kill a man, and in a way that was more humane than hanging (Power). While the actual execution of Kimmler called that belief into question, the legal means of execution remained the electric chair.

The power of electricity was never doubted; it was, and still is, an incredibly powerful force. However, the uses of electricity, and the views of these uses, were greatly varied in the

19th century. The electric chair proved that 19th-century Americans did not know as much as they would have liked to about the power of electricity. It was thought that it had the power to kill a man in a more humane way than had previously been used, but in reality, this use of electricity still needed to be perfected to fulfill that purpose. Just three years after the horrifying event of the first legal execution, the world was shown at The Columbian Exposition the immense powers of electricity to change life as people knew it for the better. Electricity, and the new manipulations of different kinds of currents, along with the invention of new generators, would allow for exponential growth of new inventions. Electricity, simply by being manipulated in certain ways, could do anything and everything:

> It can not only turn the crank of a motor, but it glows like the sun in an arc lamp, in its furnace it fuses the most refractory substances, it can freeze as well. It can talk in a telephone, do chemical work in a tank, make magnets of iron and steel, produce ether waves like light, affect other bodies at a distance, and acting physiologically, will kill or cure a man (Dolbear).

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Eugenics: The Dark Side of the Birth Control Argument

Herland, Charlotte Perkins Gilman's early 20th century utopian novel, devotes particular attention to the problem of population control. The women of Herland notice their population is growing too fast for the land to sustain them, and say, "With our best endeavors this country will support so many people, with the standard of peace, comfort, health, beauty, and progress we demand. Very well. That is all the people we will make" (69). Limiting the population was not achieved through "destroying the unborn," but rather by not allowing these babies to be conceived at all (70). The result is that only the most fit are allowed to have children, creating the most civilized and cultivated society possible. Somel explains to Van that the reason why Herland hasn't had a criminal in over 600 years is because they "made it our first business to train out, to breed out, when possible, the lowest types" (83). This concept of controlling birth and conception, and determining whose breeding should be restricted, is closely aligned with the attitudes of other contraception advocates of the time.

At the beginning of the 20th century, it was a crime in America to distribute any information about how to prevent or end conception of babies, information that modern people would associate with birth control and abortion. Information on the subject was illegal, as was its implementation. The fear about birth control and abortion stemmed from the fear of a declining birth rate among the upper classes, along with the alarmingly high birth-rate of the lower classes. Pro-birth control advocates argued that by controlling contraception, abortions would no longer be necessary, and this illegal practice would end, or at least significantly diminish. However, there was somewhat of a double standard in the pro-birth control argument. Most birth control advocates were openly eugenicists, most notably the famous birth control advocate Margaret

Sanger. She, and he like minded contemporaries argued that the lower classes should be reduced through the use of birth control, and in turn, a stronger American race would be created by those "more fit" to have and raise children. The argument for birth control thus treads on dangerous ground and raises many questions. For instance: Who is fit to bear and raise children? Who determines this fitness? And finally, when do individual rights become less important than the "common good?"

Legally speaking, birth control and abortion were the same thing in the early 20th century. Anything which would or could prevent births was grouped into the same category. Section 211 of the Criminal Code of the United States, 1909, states that every "publication of an indecent character, and every article or thing designed, adapted, or intended for preventing conception or producing abortion[…]" was punishable by a fine of up to $5,000 or imprisonment of up to 5 years (Ruppenthal 51). Throughout the code, the phrase "preventing conception or producing abortion" appears 4 times, and neither "preventing conception" nor "producing abortion" appears on its own. Contraception laws were enacted and strictly enforced to prevent the decrease of the American race.

The opposition to legalized birth control stemmed from the idea of "race suicide"--that by preventing conception, the birth-rate would decline drastically. E. Stuver quotes one doctor who argued that "Rome fell not because of the plagues, not because of the Goths and Vandals, but because of the failure in the crop of Roman children" (Stuver 152). However, the fear was more specific than simply the declining population of the United States. It was the declining population of "real" Americans, the "native stock," that generated the most concern. Economically speaking, the poorest families had the highest birth-rates, while the middle and upper-classes had the lowest birth-rates (Knopf 152). The threat of foreigners, and the high birth-rates among these groups, heightened this xenophobia. Stuver argues that "abortion is a

prominent factor in the retardation of national growth and an insidious cause sapping our physical, mental, and moral strength as a nation" (182). Although focusing on abortion, this argument also applied to any form of contraception. There was allegedly not enough of the “native stock” being born, a scarcity that was crippling the nation and keeping it from reaching its full civilized potential.

Birth control advocates saw the issue of birth control as completely separate from abortion, even going so far as to say that legalized birth control would eliminate abortion. *The New York Times* reported that a 1920 meeting of the Woman's Federation decided that, "The primary necessity for family, and therefore for public health, is an intelligently determined interval between pregnancies, to be secured by regulating the inception of life and not by interfering with life after it starts" (Women). This shows a clear distinction being made between abortion and birth control. By legalizing birth control, it was alleged, abortions would decline, something which almost all birth control advocates wanted. Havelock Ellis in *Essays in War-Time* held the same view that legalizing birth control would significantly reduce the abortion rate. Directly pointing the finger at the United States, Ellis wrote that "abortion is a wasteful, injurious, and almost degrading method of dealing with the birth-rate[…]" and that "those who work for birth control are diminishing the frequency of abortion, so *every attempt to discourage birth control promotes abortion*" (245). According to Ellis, abortion was a threat to civilization, physically, socially, and economically.

Birth control advocates argued for the legalization of birth control as a means of social and economic uplift for American civilization. The view was that there should be improvement of the American race, and that the way to do this was through birth control. Margaret Sanger wrote that "[the] central challenge is that civilization, in any true sense of the word, is based on the control and guidance of the great natural instinct of Sex" (1). The problem was that the lower

classes were having the most children, a cycle which was only reinforcing their disadvantage, and reducing the possible uplifting of American civilization as a whole. Dr. Adolphus Knopf writes that "large families, that is to say, numerous children as the issue of one couple, among the ignorant, the poor, the underfed and badly housed, the tuberculous, the degenerate, the alcoholic, the vicious, and even the mentally defective, is an everyday spectacle" (152). Knopf goes on to argue that

> The larger the family of the poor, the more child labor, the more there is disruption and irregularity, and the more frequently one finds a lower standard of life and morals in general. […] Millions of unborn children would be saved by contraception from the curse of handicapped existence as members of a family struggling with poverty or disease (157, 160).

According to Knopf, birth control and smaller families would raise the standard of living among the poor, allowing for a better quality of life.

The argument for a better quality of life was not the only position taken by birth control advocates; they argued that birth control would create a better American civilization, an argument which closely mirrored the arguments of the Eugenics movement. Knopf focused on raising the standard of living by reducing family size, but only for the lower class. Knopf argued for birth control not as a means of "reducing the population but for increasing its vigor by reducing the number of physically, mentally, and morally unfit […]" (152). There is no mention of the limiting of family size among those who are "fit" to raise children. Many other birth control advocates offered the same argument as Knopf. Havelock Ellis argued that birth control should be legalized because the lower classes had the largest families and that "their association with degenerate conditions and with criminality" had long been known (Ellis 242). According to Ellis, the lower classes, and their high birth-rate, were the direct cause of the deterioration of the strong American race. Dr. T.D. Crothers stated that the way to create a better civilization is "to limit the birth-rate, stop growing defectives and degenerate specimens of life" (9).

Margaret Sanger, one of the most famous birth control advocates of the early 20th century, openly held the same beliefs as Knopf and Ellis regarding the uses of birth control for Eugenic purposes. In her book *The Pivot of Civilization* she writes in the principles of the American Birth Control League section that

> Those least fit to carry on the race are increasing most rapidly. […] Many of the children thus begotten are diseased or feeble minded; many become criminals. The burden of supporting these unwanted types has to be borne by the healthy elements of the nation. Funds that should be used to raise the standard of our civilization are diverted to the maintenance of those who should never have been born (279).

Sanger argues that "The lack of balance between the birth rate of the "unfit" and the "fit", [is] admittedly the greatest present menace to civilization[…], the most urgent problem of to-day is how to limit and discourage the over-fertility of the mentally and physically defective" (25). The "mentally and physically defective", the "unfit", could be defined incredibly broadly. They included, but were not limited to, "criminals, alcoholics, paupers and low grade men and women" (Crothers 10).

The pro-birth control argument went one step further than simply advocating the voluntary reduction of the birth-rate among the "unfit". Birth control advocates called for the forced sterilization of those who were deemed truly unfit to contribute to the American gene pool. Knopf argues that the "mentally and physically crippled" are unable to be a part of normal society and are thus institutionalized at a huge cost to the country. However, many institutionalized individuals are released every year as "cured". "They are allowed to procreate their kind" (Knopf 155). Their children, in turn, are "likely to be mentally tainted and to become a burden to the community" (155). While Knopf does not conclude that sterilization is the answer, he certainly implies it, and leaves the topic open to discussion.

Sanger does not merely mention sterilization, but openly calls for it. She identifies the "unfit" as the "feeble-minded", and says the "one practical and feasible program in handling the

great problem of the feeble-minded. That is, the best authorities are agreed, to prevent the birth of those who would transmit imbecility to their descendents" (80). Sanger quotes Davenport in support of her position" "[The feeble-minded] are again set free to reproduce, and so the stupid work goes on of preserving and increasing our socially unfit strains" (81). Sanger states that one of the aims of the American Birth Control League is the "sterilization of the insane and feeble-minded" (282). The main concern of Sanger and other birth control advocates was that the "unfit" not be allowed to contribute to the American gene pool. If these births could be limited, presumably a better American civilization could be achieved.

Ironically, the pro-birth control advocates and anti-birth control opposition had the same goal: to create a better civilization of "fit" Americans. Birth control opponents feared that the "native stock", or "fit" Americans, would use contraception to limit the birth-rate of their class, and thus would be committing "race suicide". The nation would be overrun by the high birth-rate of the "unfit" lower classes and degenerates. Hence to solution to this threat was to thus outlaw birth control and hope that the upper and middle classes would somehow be able to compete with the high birth-rate of the lower classes. The pro-birth control advocates had the same fears of the loss of "fit" Americans, but their method was the exact opposite. By limiting the birth-rate of the lower classes, the birth-rate of the middle and upper classes would grow in comparison. The birth control advocates were very clear that birth limits should be applied to the poor, the working classes, criminals, and degenerates--those "unfit" to have children. The lower classes would have to be diminished in order to allow the upper and middle classes to begin growing in numbers, and thus to improve America, Americans, and civilization as a whole.

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Behaviorist "Nurture" Versus Religious "Nature":
Brave New World, Behaviorism, and its Criticism in the 1920s

Aldous Huxley's 1932 dystopian novel, *Brave New World*, paints the picture of a completely stabilized future English society. This stability is achieved through the social conditioning of the children. One of the ways children are socially conditioned is through instinct training. Instinct training begins when the children are 8 months old. They are brought into a room filled with roses and brightly colored books. The children are allowed to crawl to the books and flowers, and "from the ranks of the crawling babies came little squeals of excitement, gurgles and twitterings of pleasure" (Huxley 19). However, when the babies get to the books and flowers and begin to enjoy them, the Head Nurse presses a switch and "alarm bells maddeningly sounded. The children started, screamed; their faces distorted with terror" (20). Then, the lesson was rubbed in "with a mild electric shock" (20). This lesson would be repeated 200 times, and the children would grow up with "what psychologists used to call an instinctive hatred of books and flowers. Reflexes unalterably conditioned" (21). The point of this conditioning is that man, through science, has essentially defeated nature. Fears and dislikes have been created; they are not an innate feature of personality, and this man-made control is seen as "[…] a prodigious achievement on nature" (5). The social conditioning puts all the power in the hands of the conditioner, and "what man has joined, nature is powerless to put asunder," creating an entirely stabilized society (Huxley 21).

The views presented by Huxley in *Brave New World* regarding conditioning eerily echo the psychological movement of Behaviorism initiated in 1912 by John B. Watson. Watson believed that "children are made not born" (Watson, *Psychological*, 7). The traditional view of

"nature's" role was replaced entirely by "nurture." Watson, in his book on child-rearing, *Psychological Care of Infant and Child*, published in 1928, wrote that the prevalent view of child-rearing was that the mother must provide the minimal assistance, food, warm clothing, and a roof over their heads, and that "Nature does the rest almost unaided" (Watson, *Psychological*, 11). Watson argues that this view is wholly untrue, and more importantly, harmful to the child and to society. He poses the question, "Isn't it just possible that almost nothing is given to heredity, and that practically the whole course of development of the child is due to the way [you] raise it?" (Watson, *Psychological*, 15). Watson claims that, just as there is no heredity, there is also no natural instinct. Emotions and behaviors such as love of parents, fear, climbing, imitation, curiosity, and jealousy are just a few of a long list of infant behaviors which were previously thought to be instinctual, but, Watson argued, are "*built in* by the parent and by the environment that the parent allows the child to grow up in" (Watson, *Psychological*, 38). Essentially, this is the social conditioning presented in *Brave New World*. Children grow up to be who they are as a result of the conditioning that they have received.

Watson advanced his view of conditioning with experiments centered on children and fear. The common belief was that there were just some things that infants were instinctually afraid of, such as slimy animals, complete darkness, or fire. Watson rejected this idea stating that "fear of all other objects is home-made" (Watson, *Psychological*, 52). To prove this, Watson showed a 9-month old infant a rabbit. As the infant starts to reach for it, a steel bar is hit with a hammer just behind the infant's head. At the loud, startling sound, the infant "whimpers and cries and shows fear" (Watson, *Psychological*, 52). The rabbit is again shown to the infant. He reaches toward the rabbit again, but this time much more apprehensively. The steel bar is again hit, and the infant again shows fear. The third time the rabbit is shown to the infant, "*He shows fear at the sight of the rabbit*. He makes the same reaction to it as that he makes to the sound of the steel

bar. He begins to cry and turn away the moment he sees it" (Watson, *Psychological*, 53). This experiment is exactly the same as the social conditioning of children against books and flowers in *Brave New World* except that it lacks the more extreme electrocution to drive the lesson home. The child has been conditioned to dislike or fear something due to external influences, not because there is an instinctual fear.

Fear is something which may be easily accepted as a conditioned response, but Watson claims that even the most “instinctual” or “natural” reaction, love, is conditioned just the same as fear is. Watson states that "The love life of the child is *at birth* very simple as is all of its other emotional behavior. Touching and stroking the skin of the young infant brings out a love response. No other stimulus will. This means that there is no "instinctive" love of the child for the parents, nor for any other person or object" (Watson, *Psychological,* 72). Watson claims that loves are built just as fears are built, i.e. "loves are *conditioned*" just as fears are. "The touch of the skin takes the place of the steel bar, the sight of the mother's face takes the place of the rabbit in the experiments with fear. The child *sees* the mother's face when she pets it. Soon, *the mere sight of the mother's face* calls out the love response" (Watson, *Psychological,* 74). Watson claimed that "[Love] requires no instinct, no "intelligence", no "reasoning" on the child's part for such responses to grow up" (Watson, *Psychological,* 74-5).

Watson claimed that Behaviorism, and "nurture," explained all human emotions and conditions as simply stimulus and response reactions, including instinct, memory, thought, and personality, asserting that these processes were "easily understandable integrations of stimulus-response behavior" (Watson, *Ways,* 3). Aspects of the human being which could not be proved, such as the conscious and unconscious and the soul, were simply rejected by Watson as non-existent, stating that "Behaviorism leaves out speculations" (Watson, *Ways,* 3). The physical is the focus of Behaviorism and everything which had been traditionally thought of as mental is

explained as a manifestation of the physical. Watson's views on instinct and personality were explained through his views on infant behavior and conditioning. For example, a loud sound creates a negative physical reaction and thus a negative mental reaction. Memory is explained as simply an act of "learning, and loss in skill which comes from lack of practice", skills which were learned through the physical (Watson, *Ways,* 65). Watson acknowledges that thought is difficult to explain as being an element of physical learning, but explains thought in terms of words--words which have conditioned reactions just as everything else does (Watson, *Ways,* 80). "Man reacts not only to words spoken by others and to words written in books, *but also to words he himself silently speaks*" (Watson, *Ways,* 82). In other words, thought is simply man speaking to himself. This is Watson's basis for assuming that everything that makes up human beings is grounded in physical causation, and the mind is simply a manifestation of the physical, which supports Watson's claim that there is no conscious. Watson states that if there is "no observable separate entity called mind, then there can be no such thing as consciousness or its substratum, the unconscious" (Watson, *Ways,* 96).

Not surprisingly, due to these extreme views on conditioning and the lack of any "natural" instincts, as well as the claim that there was no consciousness or soul, Watson and Behaviorism were the subjects of intense contemporary criticism. It is not surprising that much of this criticism came from a religious standpoint. The prevailing view was that religion, or "Intelligent control," and Behaviorism were incompatible (Frick 515). People with strong religious convictions completely rejected Watson's claims about the lack of "nature" in humans. Watson's claims went against everything that religion taught about the conscious and the soul, both firmly rooted in the mind, not the body. Phillip Frick wrote in *The Methodist Review* in 1928 that "by dogmatically rejecting some of the all-important factors in the evaluation of the self, […] by discrediting the belief in the uniqueness of human personality, behaviorism has

proven itself the most subtle foe of all spirituality during the past two decades" (Frick 509). In another 1928 issue of *The Methodist Review,* Manfred Carter wrote that there was a great battle between "those who believe in the new method of behavior study and those who still hold to the older method of introspection, that is self examination of consciousness" (Carter 891).

The essential critique that religious critics made of Behaviorism was its rejection of everything that was not grounded in the physical. They claimed that Watson's Behaviorist views on the all-encompassing physical were too simplified, and that "[t]he human being is a psycho-physical creation" and that "[w]e are more than just bodies" (Frick 511). Carter believed that there is "something mysterious called the soul" which causes us to pay attention to something like a beautiful sunset, whereas the Behaviorist claims that this is "only the dominant habit system functioning" (Carter 892).

Both Frick and Carter challenged Watson's claim that there is no consciousness or soul, relying on traditional, religious beliefs about the "natural" spiritual aspect of man. Frick argues that it is "[f]or the sake of the spiritual does the physical exist. On this unshakable foundation is religion grounded" (Frick 511). For Carter, the fact that religion exists was proof enough that the physical is not the only system which creates human beings. Carter gives a related, illogical argument, stating that "[t]he fact of consciousness is proof enough of the soul" (Carter 897). Frick challenges Watson's stimulus-response theory by stating that "[t]he mere physical stimulus would remain only an external stimulus unless there was a spiritual ego which apprehends and reinterprets them" (Frick 512). He argues that art also proves the existence of the soul: "Because we human beings thus have the urge to appreciate values do we become creators in the realms of art and music and science and government and moralized social relations. […] We are creators because we have a spirit akin to God" (Frick 520). The essential conflict between religion and

Behaviorism lies in Behaviorism's rejection of everything that cannot be proven or physically observed, while religion is based entirely on ideas that cannot be proven.

This religious criticism of Behaviorism returns us to Huxley's *Brave New World*, eerily echoing the novel just as Watson's infant conditioning experiments did. Religion, as well as art, have been abolished in the future society of *Brave New World* because they are incompatible with social conditioning and the stability of happiness in this dystopian society. All art has been done away with, because, according to World Controller Mustapha Mond, art is incompatible with happiness, and happiness is the most important thing for stability (Huxley 231). Religion, just like art, is another casualty of social stability. Mond tells John the savage that "God isn't compatible with machinery and scientific medicine and universal happiness. You must make your choice. Our civilization has chosen machinery and medicine and happiness" (Huxley 240). John responds to Mond, asking "But isn't it *natural* to feel there's a God?" (240). Mond responds by asking “You might as well ask if it’s natural to do up one’s trousers with zippers. […] People believe in God because they’ve been conditioned to believe in God” (241). John’s religious feeling of what is natural goes back to the traditional view of what is "natural" human instinct or feeling or consciousness, whereas Mond embraces the Behaviorist view that all feeling is a result of conditioning. Behaviorism rejects any innate human feeling, whereas religion is completely reliant on it.

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The Real Ecotopia: The (Updated) Last Whole Earth Catalog

While the majority of Utopian and Dystopian novels generally have some root in their contemporary social and cultural realities, they are not works of non-fiction. The authors of these works use fiction to reveal and comment on the realities of life they felt were unsatisfying, to discuss their views of human nature, and to present their view of an ideal society. Ernest Callenbach's 1975 Utopian novel, *Ecotopia,* is no different from other Utopian works, being fiction, but it is also deeply rooted in the realties of his time. In comparison to the 1974 edition of *The (Updated) Last Whole Earth Catalog*, there are many obvious similarities in *Ecotopia* to the "real" society and culture of 1960s and 70s America. The stereotypical counterculture of the 1960s and 70s that is featured in *The Catalog* is prevalent in *Ecotopia*. In both of the source books, there is a focus on the preservation of the earth, through earth-friendly agricultural techniques, new energy production and efficiency, and recycling and composting. Communal living is presented as a superior way of living. Free-love and the use of birth-control are encouraged. Respect for nature and the outdoors is standard, and people are generally depicted living more simplified, natural lives. However, Callenbach's fictional work also echoes the "real" culture of the 1960s and 70s in less obvious, more specific ways such as similar materials such as plastics, and housing, as well as similar larger spiritual beliefs about Japanese communes, Indians, and beliefs about death. *Ecotopia* and *The (Updated) Last Whole Earth Catalog* share specific similarities which make *Ecotopia* feel less like a work of fiction, and more like an accurate description of 1970s American counter-culture.

One specific material similarity between the two texts is plastics. A newly invented biodegradable plastic is central to the Ecotopian recycling effort. The reporter Will Weston

writes that "Ecotopian plastics are entirely derived from living biological sources (plants) rather than from fossilized ones (petroleum and coal) as most of [Americas] are" (Callenbach 83). Weston goes on to say, "One interesting strategy for biodegradability involved producing plastics which would automatically self-destruct after a certain period or under certain conditions" (84). Ecotopian scientists also modified molecular structures of certain durable plastics, which had "keyholes, which can be opened only by soil micro-organisms! Once they are unlocked, the whole structure decomposes rapidly" (84). These new forms of plastic are essential to the stability of the Ecotopian society in that they create a sustainable and reusable form of waste.

In *The (Updated) Last Whole Earth Catalog*, plastics are also discussed. The page on plastics appears in the "Industry" section of the catalog. While *The Catalog* does not highlight any processes as advanced as those described in *Ecotopia*, *The Catalog* does recommend several books on the topic which describe the same kind of ideas described in *Ecotopia*. The book *Plastics in the Modern World* describes "the physical, chemical and behavioral aspects of plastics, while also explaining the manufacturing process involved in plastics production" (Updated 129). Another book, *New Science of Strong Materials*, does not focus only on plastics, but includes plastics in the scientific investigation of "the atoms and molecules upon which the mechanical properties of materials depend, and this book is a clear explanation of some of the discoveries being made" (129). These two books directly describe the attitude regarding plastics which are present in *Ecotopia.* The process of creating biodegradable plastics had not yet been invented, but *The Catalog* envisions a not-too-distant future where *Ecotopian* plastics would be available.

Another specific way that *Ecotopia* echoes materials found in *The (Updated) Last Whole Earth Catalog* is in its description of housing options. People in *Ecotopia* devise a new method to build housing out of plastic, because of their high reverence for wood, and out of a concern for

preserving forests. Weston reports that "[t]hey have designed machinery that produces oval-cross-section tubing[…] The resulting houses take many shapes--in fact I've never seen two that were alike--but you can get the general impression by imagining that jet airplane cabins could be bought by the yard and glued into whatever shapes you had in mind" (Callenbach 133). Weston goes on to write that "not only can the sections be glued together by unskilled labor, their cost is very low--a room size section costs less than a fifth of what a standard-construction room costs[…]" (134). The Ecotopians have created cheap, mass-producible housing which can be built by anyone, not just skilled builders and architects.

The (Updated) Last Whole Earth Catalog also highlights the advantages of mass-produced, easily assembled housing, although the special plastic building materials as envisioned in *Ecotopia* were not yet available. In the "Shelter" section, the description of a book, *Shelter and Society*, reads, "Seldom do you see anything on buildings by the people, of local materials and in simple harmony with the surrounding landscape. Here's an exception" (Updated 86). Also in the "Shelter" section are multiple pages on domes, probably the closest thing to the plastic structures of *Ecotopia*. The domes are easily manufactured, take little skill in construction, and can be modified and added to according to each individual's aesthetic desire. Many of the domes are made out of wood, but some are made out of fiberglass, a new and innovative material for this kind of building. In one description of the domes, the author writes that "[the dome manufacturer] has been experimenting for some time with foam-fiberglass buildings, has built a machine that produces the sandwich panels, and is about to market a foam dome" (92). This "foam dome" sounds remarkably like the plastic boxes manufactured in *Ecotopia*.

In addition to the material similarities between *Ecotopia* and *The (Updated) Last Whole Earth Catalog*, the two works also share a similar spiritual viewpoint. One example of the common spiritiual belief is the views regarding Japanese communes. The Ecotopians believed

that Japanese communes and baths had special healing powers, which Will Weston discovers when he is kidnapped. He writes in his journal, "Turns out this is a famous hot spring resort that has been rehabilitated by a Japanese commune. My captors seem to half-believe in its alleged restorative powers" (Callenbach 168). Whether or not the Ecotopians fully believed in the healing powers of the Japanese baths, there was obviously some level of belief in their healing powers. One of Weston's captors explains that the President of Ecotopia was concerned about Weston's well being, and that "she thought the hot springs might do [him] some good, help [him] get through it all" (180).

In *The (Updated) Last Whole Earth Catalog*, Japanese communes and baths are assumed to have the same kind of mystical healing powers. In the "Community" section, there is discussion of communes in general, but the only kind specifically named are the Japanese communes. The page on Japanese communes consists of three letters from people who visited communes in Japan after Gary Snyder wrote about the Suwanose Commune on a volcanic Island off the coast of Japan, and about a man named "Nanao who wanders around injecting energy and absurd purpose into fellow humans" (Updated 179). While the letters focus the struggles that the visitors faced while visiting the communes, they also highlight that the visit to the communes has been "a very far out experience for all three of us and full of truly good people and places" (179). The Japanese communes were viewed with a certain level of mysticism, both by Ecotopians as well as by "real" people living in the 1970s.

Another example of the larger spiritual beliefs shared between the two texts is the sentimentality displayed toward Native American culture. When discussing why people don't wear watches in his journal, Weston says that people in Ecotopia say, "You'd never catch an Indian wearing a watch", and Weston justifies this comment by saying, "Many Ecotopians [are] sentimental about Indians, and there's some sense in which they envy the Indians [and] their lost

natural place in the American wilderness" (Callenbach 31). In addition, many Ecotopians had "self-adopted Indian-inspired name[s]" (54). Weston himself compares the Ecotopians to Indians, writing in his journal that "[Ecotopians] evidently feel a little as the Indians must have felt: that the horse and the teepee and the bow and arrow all sprang, like the human being, from the womb of nature, organically" (51).

This sentimentality about Indian culture and beliefs is directly reflected in *The (Updated) Last Whole Earth Catalog*. A page in the "Shelter" section of *The Catalog* is devoted solely to tipis. In one description of the "Indian Tipi", the author writes that "you can appreciate the elegant design of a tipi and the completeness of the culture which produced it" (Updated 100). The description continues with a section on Indian etiquette in the tipi, as well as the Indian process and method for its construction. The author views the tipi as connected to nature, writing, "The moon rides high in the late fall nights, and when it is full, shines right down through the smoke hole. Its pale white light on the tipi furnishings, added to the rosy glow of the dying fire, is beautiful beyond description" (100). Additionally, in the "learning" section of *The Catalog*, the author devotes three full pages to Indian crafts and books. In the introduction to the book section, the author writes, "I'm sure that the books all by themselves cannot by themselves deliver the Native American Experience. For that you will need time immersed in the land and neighborly acquaintance at least with some in fact Indians" (382). The Indian experience and culture is revered by the authors of *The Catalog,* and promoted as something other Americans should not only understand, but attempt to emulate.

The aligned spiritual beliefs of the two texts can further be seen in the similar attitudes regarding death. The views on death presented by *Ecotopia* and *The (Updated) Last Whole Earth Catalog* are remarkably similar. Weston writes that "Ecotopians have a curiously fatalistic attitude toward death. They prefer to die at home, and elderly Ecotopians spend a good deal of

time and energy preparing themselves for death. It is even said that, like American Indians, they can select the day of their death, and almost will themselves to die" (Callenbach 156). This attitude about death comes form the Ecotopians "ecological religion" and the belief that when they die, "they too will now be recycled" (156).

It is surprising that *The (Updated) Last Whole Earth Catalog* would even deal with the issue of death, but *The Catalog* goes into great detail about the subject in the section on "Community". *The Catalog* offers books on the subjects of death and burials, as well as instructions for a "Do-It-Yourself Burial for $50", and excerpts from articles on death. The "Do-It-Yourself Burial for $50" description states that "Human bodies are an organic part of The WHOLE EARTH and at death must return to nourish the ongoing stream of life" (Updated 225). This is exactly the point of the "ecological religion" of Ecotopia. One of the article excerpts further demonstrates the Ecotopian attitude about the acceptance of death by those close to nature, just as Indians who are closer to nature have a special acceptance of death. *The Catalog* quotes from the April 6, 1970 *Newsweek*: "[…] the rural person who has lived his life in close contact with the cycle of nature accepts death more readily as a fact of life", and does not wish, like the city person, to be kept alive past his time by the use of drugs (225). The belief and attitudes about death in *Ecotopia* directly mirror the beliefs presented in *The Catalog.* People who are close to nature have the ability and will to accept their death when it is their time to die. Both works also present the view that death is simply part of the circle of life and that in dying one is contributing to essential composting and recycling needed to continue life.

The specific material and spiritual connections between Callenbach's *Ecotopia* and *The (Updated) Last Whole Earth Catalog* make *Ecotopia* feel more like reality than a work of fiction. By creating a society that in general directly resembles the real contemporary culture and society, Callenbach creates a seemingly plausible society. Callenbach takes the more general

connection between the real contemporary society and his Utopian society one step further by inserting specific details and connections which come directly out of everyday life. This has the effect of making Callenbach's Utopia not one to be imagined in the distant future, but one which already existed in the minds of many in the 1960s and 1970s ecologically-minded counterculture.

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