



BIOTECH NIGHTMARE: SCIENCE FICTION DYSTOPIAN VISIONS OF HUMAN GENETIC ENGINEERING AND CLONING WITH SPECIAL REFERENCE TO *THE BOYS FROM BRAZIL* AND *BEGGARS IN SPAIN*

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ABSTRACT

This article explores the dystopian visions of human genetic engineering and cloning as expressed in science fiction with special reference to Ira Levin's *The Boys from Brazil* (1976) and Nancy Kress's *Beggars in Spain* (1993). *The Boys from Brazil* presents the deep-seated fears associated with reproductive cloning. It creates a panic over human cloning by portraying its potential to immortalize an evil person like Hitler. Nancy Kress portrays the devastating social and political consequences emerging from genetic enhancement. It promotes class-conflicts and endangers democracy. Since the publication of Mary Shelley's *Frankenstein* (1818), science fiction has always projected profoundly disturbing pictures of the unforeseen consequences of genetic engineering and cloning in humans. It exhibits deep anxieties about these technologies and offers nightmare scenarios. Genetic manipulation mutates human genome and leads to directing human evolution. It has the potential to create a new genetically superior posthuman species that promotes social and political inequality. Human cloning devalues the dignity and mysteries of human sexual reproduction. This technology can be misused for the creation of replicas of evil persons. Therefore, science fiction projects bleak pictures of the fate of humanity at the hands of mad scientists who 'play God'. In a nutshell, these technological dystopias are deeply skeptical about genetic technologies. They address the darker aspects of these technologies which design evolution and endanger humanity as a whole.

Key words: Science fiction, genetic engineering, cloning, Sikhism

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INTRODUCTION

In 1953 James Watson and Francis Crick together made the ground-breaking discovery of the double helix structure of DNA, the molecule that contains the genetic information of an organism. Fifty years after this discovery, the Human Genome Project, an international research program, decoded the three billion bases of DNA. The completion of the Human Genome Project in 2000 revolutionized

technologies such as genetic engineering and cloning in humans. The map of the human genome has given scientists the power to manipulate and modify human genetic material. Genetic engineering or genetic modification alters the genetic makeup of humans. "Genetic modification of humans is not only possible, it is coming fast" (McKibben). Germ-line genetic engineering modifies the genetic makeup of an embryo by adding, deleting or modifying its

genes (McKibben). Genetic engineering raises many moral, ethical and sociopolitical issues. In the case of germ-line engineering, the modifications will enter the succeeding generations also, and so it engineers evolution “according to an era’s fashion” (Dinello 184). Germ-line genetic engineering has the eugenic aim of selective breeding of “designer babies”. It is entirely possible that rich couples will select the genes of their children to engineer genetically superior “designer babies”. Michael J. Sandel exhibits his objection to genetic engineering when he argues that it makes children “objects of our design and products of our will or instruments of our ambitions” (Sandel 45). Germ-line engineering commercializes human procreation and makes children commodities. Francis Fukuyama in his *Our Posthuman Future* asserts that “Humans genetic engineering raises most directly the prospect of a new kind of eugenics...” (72). Germ-line engineering can be considered as an extension of eugenics or selective breeding of people with better genes. Eugenics is the process “to improve the genetic makeup of the human race” (Sandel 63) through selective breeding. Nazis used this process to create an Aryan race having better genetic qualities. “Ultimately, Hitler carried eugenics to mass murder and genocide” (Sandel 67). Creating genetically superior humans will lead to an extremely stratified society and promotes class wars. Lee M. Silver in his *Remaking Eden* emphasizes that genetic modifications lead to two classes of people--the genetically enhanced ‘GenRich’ and the unenhanced ‘Naturals’ (4). This technology engineers human evolution and endangers humanity as a whole. It has the ability to change human nature. It has a “dehumanizing potential” (Fukuyama 72) and designs a new posthuman species.

In 1997 Ian Wilmut and other scientists of the Roslin Institute in Scotland successfully cloned the sheep Dolly. The cloning of this first mammal makes human cloning a not-too-distant possibility. Human clones will soon leap to reality out of the pages of science fiction. Dolly was cloned through Somatic Cell Nuclear Transfer. That is, “the nucleus of a mature...egg is removed and replaced with a nucleus obtained from a specialized cell of an adult (or fetal) organism” (Kass and Wilson 13). Human

cloning raises many ethical concerns. It diminishes the dignity and mysteries of human sexual reproduction. “Cloning represents a giant step...toward transforming procreation into manufacture...” (Kass and Wilson 27). Cloning is a new kind of eugenics. In cloning people with known genetic traits are replicated through Somatic Cell Nuclear Transfer. The eugenic part of cloning is that the superior genetic traits of existing or dead people are made to persist in the next generation. The genes of evil dictators can be strengthened through reproductive cloning. In this way, reproductive cloning threatens the diversity of our species by replicating and perpetuating some desirable genes.

Science fiction has always been deeply skeptical about genetic engineering and cloning in humans. Many dystopian narratives about these technologies have presented frightening possibilities. They have offered many nightmare scenarios about the disastrous consequences of these technologies. Mary Shelley’s *Frankenstein* (1818) is the first work that has given a bleak picture of such genetic technologies. It serves a warning and embodies the worst fears associated with them. Frankenstein’s monster symbolizes the horrific results arising from these technologies. It envisions a nightmarish world where scientists ‘play God’ to create monstrosities. Another profoundly pessimistic work that forms a cautionary tale against genetic technologies is Aldous Huxley’s *Brave New World* (1932). The novel envisions a society where “state controlled reproduction” (Dinello 212) engineers children with desirable traits at “hatcheries” or “breeding centers”. At the conditioning centers people are dehumanized and divided into four classes – Alphas, Betas, Gammas and Deltas--to serve certain social functions. Huxley asserts that dehumanizing genetic technologies will have horrific results.

Cloning Evil: The Horror of Replicating Hitler in *The Boys from Brazil*

Ira Levin’s *The Boys from Brazil* exhibits science fiction’s worst fears of the potential of cloning to give life to an evil dictator like Adolf Hitler. It projects a dystopian vision of cloning by presenting the nightmarish scenario of “Nazi genetic technology” or using cloning for “eugenic purposes” (Dinello 188). The frightening aspect of the novel is

that here reproductive cloning leads to eugenics in creating ninety-four Hitler clones with “dark hair, blue eyes and sharp nose” (Levin 172). In the novel, Dr. Josef Mengele, Auschwitz’s “Angel of Death” hatches a conspiracy to clone Hitler in order to create the next “final solution”. As Auschwitz’s doctor, he conducted horrible genetic experiments on thousands of twins in the 1940’s. Later, during the Second World War, he escaped to South America. The novel portrays Mengele as an evil geneticist who weaves a scheme to recreate a new Hitler in his quest for racial hygiene.

In *The Boys from Brazil* eugenic cloning strengthens and replicates the superior genes of Adolf Hitler. Dr. Mengele collects skin and blood samples from Hitler and hatches his plan at a laboratory in Brazil. He clones ninety-four boys by replacing the nucleus of an egg with the nucleus of Hitler’s cell. The eggs having Hitler’s genes are later planted inside ninety-four women. As Professor Nurmberger explains to the Nazi-Hunter Yakov Leibermann:

In mononuclear reproduction, the nucleus of an egg cell is destroyed, leaving the body of the cell unharmed. This is done by radiation, and is, of course, microsurgery of the most sophisticated order. In to the enucleated egg cell is put the nucleus of a body cell of the organism to be reproduced....Instead of a new and unique individual, we have an existing one repeated. (Levin 188)

The novel focuses on the inevitability of environmental factors in cloning. It repudiates “genetic determinism--that the genes totally control the persons” (Dinello 214). A notorious geneticist, Mengele knew well that cloning Hitler’s genes will not replicate his evil mind. Environment plays a crucial role in molding a person’s mind. So, “to resurrect Hitler, Mengele must reproduce the environmental factors that made Hitler the evil genius that he was” (Dinello 213). Here, Mengele is bent on recreating the environment which molded Hitler’s evil mind. His target here is to fuse genetics and environment. It was the environment in which Hitler lived that made him a sadist.

Hitler was the son of Alois Hitler, an Austrian civil servant. He was an authoritarian father and young Hitler had a strained relationship

with him. Hitler’s mother Klara was the third wife of Alois who was twenty years older than her. Though he was attached to his loving and caring mother, his enmity towards his father was deep-seated. His father subjected him to brutal physical punishments. He rebelled against his father. This antagonism made him oppose everything but Germany. Hitler’s father died when he was fourteen. The death of his mother in 1907 also deeply affected him. All these factors did much towards shaping him into a monster responsible for “the final solution”.

Attempting to recreate the environment which shaped Hitler’s personality, Mengele approaches Frieda Maloney, a former guard in Nazi concentration camps. He orders her to arrange the adoption of the Hitler clones by families with a strict, authoritarian civil servant father and a loving but submissive mother who is much younger than the father. The parents are “matched only by age, race and the father’s occupation” (Levin 135). “To create young Hitler’s emotional disturbance when he lost his father” (Dinello 213), Mengele and his “Comrades Organization” hire men to assassinate their fathers when the clones are fourteen. He thinks that this will turn the boys into real ‘Hitlers’. His plan is “to make them psychological Hitler’s as well as genetic ones” (Levin 190).

Mengele wants to bring back the dead Fuhrer to create a fourth Reich. All the Hitler clones have dark hair, blue eyes and sharp nose. Hitler had talent for painting. The clones excel in painting, music, film-making etc. Mengele thinks that at least one of them will turn out to be a Hitler and commit further atrocities. The true horror is embodied in the Nazi-Hunter Yakov Leibermann’s words: “How many Hitlers out of the ninety four? One? Two? Three?” (Levin 197). Mengele meets a tragic death when one of the Hitler clones orders his dogs to tear him to pieces. The clone is infuriated to see his father murdered by Mengele. The devastating impact of Mengele’s cloning is felt when a Hitler clone paints and develops fantasy of grandeur, dreaming himself orating amidst a large group of “roaring” spectators, “sort of like is those old Hitler movies” (Levin 280). Hitler was a megalomaniac and a mesmerizing orator. This ending foreshadows the rise of a new Hitler to repeat monstrosities.

The boys from Brazil presents the deep-seated fears associated with reproductive cloning. It creates a panic over human cloning by portraying its potential to immortalize an evil person like Hitler. Reproductive cloning helps “to produce for later use many Adolf Hitlers or Saddam Husseins”. Cloning can help “produce an unending chain of vicious leaders. That is less farfetched...” (Kass and Wilson 61-64). Projecting a nightmarish world where the Angel of Death replicates the evil genes of Hitler, the novel advocates a ban on reproductive cloning.

Redesigning Life: Social and Political Implications of Genetic Modification in *Beggars in Spain*

Nancy Kress's *Beggars in Spain* (1993) is a dystopian narrative which paints the bleak picture of an America where human genetic engineering has become a reality. It presents a stratified American society with two warring human species. Rich parents through germ-line modification alter the genetic makeup of embryos to make “perfect” children. They are subjected to in vitro fertilization at a fertility clinic to create an embryo and with the help of a geneticist the embryo is endowed with desirable genetic traits. Here in *Beggars in Spain* prospective parents adopt a new genetic modification, i.e., Sleeplessness, at the Biotech Institute. Leisha Camden is the twenty-first of the genetically enhanced “designer babies” whose genome is designed not to sleep. They are “more intelligent, better at problem solving and more joyous” (Levin 11). This enhancement grants them physical and cognitive superiority. Genetically programmed not to sleep, the sleepless have more productive time at their disposal than the normal people. The enhancement allows immortality to these “designer children” by releasing a tissue-regenerative system. They won't age after their youth. They are “supermen, homo perfecto....Immortal” (Kress 67).

Germ-line genetic engineering alters the genetic makeup of an embryo by adding, deleting or modifying its genes (McKibben). Germ-line modifications are inheritable; they pass to the succeeding generations directing the course of human evolutions. Francis Fukuyama says that, “Genetic modification is more like giving our child a tattoo that she can never subsequently remove and

will have to hand down not just to her own children but to all subsequent descendants” (94). This directs the course of human evolution and develops a genetically superior posthuman species. In this case, human germ-line modifications interfere with human nature and afford to lose “human essence” or “species-typical human characteristics” (Fukuyama 152).

Germ-line genetic engineering raises many moral and ethical issues. Genetic modification makes children mere products or commodities. Here, “instead of making babies by making love, we will have to move conception to the laboratory” (McKibben). It makes children commodities and commercializes human sexual reproductions. It is “hubris” (Kass and Wilson 18) on the part of the parents to design children “which conform to their consumer preferences” (Roberts 28). Designing babies with desirable traits is a ‘privatized’ or ‘free-market’ eugenics” (Sandel 68). In their quest to “perfect” their children, parents are just fulfilling their aspiration by controlling their destiny (Kass and Wilson 18).

Coming to the sociopolitical consequences of genetic engineering, we can say that genetic engineering promotes social and political inequality. Germ-line genetic engineering is costly and only a wealthy few will benefit out of it. These wealthy people “perfect” their children endowing them with desirable traits like greater intelligence, higher physical capacities and better looks. The poor people who don't get access to this procedure remain natural. The gap between the rich and the poor widens here on a genetic basis. This creates two classes of people--the genetically enhanced and the unenhanced. One of the social outcomes of genetic engineering is that, “The mobility between the lower and upper classes might disappear, and a child born to poor parents, lacking genetic enhancements, might find it impossible to successfully compete against the super children of the rich” (Nick Bostrom).

The genetically enhanced will take themselves to be superior and marginalize unenhanced normal people. Over time, they will evolve as the ruling class and exert control over an envious and threatening majority. It “poses a threat

of democracy...promoting class racism" (Roberts 28). Biological difference destroys social equality and political solidarity. Lee M. Silver foresees a future America where the population is divided into "the GenRich "(genetically enhanced) and "the Naturals" (unenanced) who are "entirely separate species with no ability to cross-breed" (7).

In *Beggars in Spain* America is split into two species of humans--the Sleepers and the Sleepless. They are not created equal and their difference is ingrained in their genome. Physical and cognitive superiority help the Sleepless outperform the normal people in all areas of life. They find themselves "better". The Sleepers find their existence threatened and begin to feel extreme hatred and fear of the enhanced. They develop "anti-Sleepless sentiment" (Kress 71). They start threatening and attacking the Sleepless. Becoming the victims of extreme hatred and abuse, the Sleepless begin to segregate themselves from the society. Tony Indivino the Sleepless, much to Leisha Camden's shock, is killed by the Sleepers merely because he is "different". As prophesied by Lee M. Silver, the society is divided into two species with no chance to "cross-breed" (7).

Economic inequality widens the divide between the Sleepers and the Sleepless. "A society with higher average intelligence may be wealthier, in so far as productivity correlates with intelligence" (Fukyama 97). The Sleepless are more productive thanks to their physical and cognitive enhancements. Gradually, they begin to "exercise a through going control of the major institutions in society" (Roberts 31) -- "the economy, the media , the entertainment industry, and the knowledge industry" (Silver 6). They control science, technology, economy and politics of the United States. The Sleepless followed Yagaiist ideology which asserts the value of productivity and "mutually beneficial trade or contract" (Levin 27). According to this ideology, the strong owes nothing to the weak and the weak have no claim on the resources of the strong. The genetically inferior sleepers come to be known as "beggars", "leeches" and "parasites". Their physical and intellectual inferiority make them mere consumers of what the enhanced produce. The

"beggars" thrive on the things offered by the Sleepless while their contribution is totally negative.

Political and economic strife continues when the Sleepless form a group with Jennifer Sharifi as their leader. Together they start their life in a secluded "armed restricted city" named sanctuary. It is on the Allegheny Mountains in New York. Tony Indivino and Jennifer Sharifi establish many defensive mechanisms to prevent the Sleeper invasions. They have dazzling technologies and their high-tech city have many factories, genetic research centers, telecommunication centers, law offices etc. Political rift evolves and encountering further threats from the beggars, the Sleepless launch the Sanctuary into a cylindrical orbit above the Pacific Ocean. But the Sanctuary is still under the US government and legal jurisdiction. In order to get political upper hand over the Sleepers, Jennifer Sharifi, at the Sharifi Labs, engineer the next generation of genetically altered children--the Supers. They have genetic modifications (genemods) far beyond those of the Sleepless. They have enormous heads and their brains produce endless strings of genetic codes. In her quest for political power, Jennifer wants the Sanctuary Council to form a government of their own.

The United States' hatred grows and the Sanctuary is denied any legal representation in the government. They are heavily taxed and threatened with a military attack. This leads the representatives of the Sanctuary Council to secede from the US. They declare independence on January 1, 2092: "this orbital colony is, and of right ought to be, a free and independent state; that we are absolved of all allegiance to the United States, and that all political connection between them and the United States is ought to be dissolved" (Levin 356). Political antagonism goes to the extent of Sanctuary planting bio-weapons in New York, Los Angeles, Atlanta, etc. Over time, the Supers who are genetically far superior start to view the Sleepless as "beggars", and form a separate community of their own. They, under the leadership of Miranda Serena Sharifi, take over the Sanctuary and ruin Jennifer's plan to attack the U.S.

In *Beggars in Spain*, genetic engineering creates a stratified society of the Sleepers and the

Sleepless. The designing of the genetically enhanced endangers social equality and political solidarity of America. Biological superiority makes the Sleepless the economic and political elites of America and leads to the marginalization of the non-productive beggars. The political divide entails the formation of two governments – the Sanctuary Council and the American Congress--that engage in terrorism and warfare. The Sleepers, the Sleepless and the Supers are the three stages of humans evolution. They are not created equal and as Leisha Camden says, “When individuals are free to become anything at all, some will become geniuses. And some will become resentful beggars. Some will benefit themselves and their communities, and others will benefit no one and just loot whatever they can. Equality disappears” (Kress 397).

Nancy Kress portrays the devastating social and political consequences emerging from genetic enhancements. It promotes class-conflicts and endangers democracy. The novel suggests these catastrophic results as the strong reasons to prohibit such genetic technologies.

From the above analysis it becomes evident that science fiction has always addressed the darker aspects of genetic engineering and cloning in humans. It paints bleak pictures of future in which “designer babies” and human clones tamper with human evolution. When *The Boys from Brazil* presents the potential of reproductive cloning to reduplicate evil dictators, *The Beggars in Spain* analyses the socio-political outcomes of genetic engineering. In this way science fiction projects the worst fears and grave misgivings associated with genetic technologies and advocates ban on them. Such profoundly pessimistic narratives forecast doom for humans and create panic over the horrible results of genetic engineering and cloning in humans.

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