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Gene_Mixing and Loops of the Self

On the Perpetuation of the Bachelor Machine in Popular Culture

Genetic engineering and biotechnology are designing mankind and its living environment to an ever greater extent. This everyday business of constructing and producing nature provokes powerful disapproval, even though this is basically a process that mankind has been carrying on since the very dawn of civilization. But when it comes to employing genetic engineering in the service of medicine to gradually wipe out disease and thus ultimately to improve the lot of mortal men and women, then biotechnology enjoys broad-based support. The positive assessment of the life sciences is associated with the age-old human dream of immortality (see Richard 1995). In addition to the production of replacement parts by means of genetic engineering, an important role is played by biological preformation—that is, the predetermination and design of a yet-unborn life. On the other hand, fear in the face of the threat posed by genetically-altered foodstuffs is fed by the realization that this technology will, yet again, be incapable of fulfilling this dream and that it—like every key technology before it—has its price: the risk of uncontrollable development that is inherent in it.

Spectacular media reports featuring pictures of mutants such as the oncomouse give rise to the suspicion that genetic engineering merely nurtures abstruse male dreams of omnipotence and reproduction, such as those of Mr. Al-Fayed, the owner of the London department store Harrods, who, according to the May 15, 1999 *Frankfurter Rundschau*, announced that he wanted to have 100 clones of himself produced. Identical clones presumably will eternally perpetuate one's power and the work one has begun.

If these fantasies came true, then it would mean that cloning would lead to the generation of life on the primitive level of identical cellular reproduction of bacteria and microbes. The dream of the perfectly cloned copy produced in an uncompromising process of selection that surpasses natural methods and represents a perfection of mediocrity has been detected by Baudrillard (see Baudrillard 1994). Evolutionary changes that are brought about through modification due to sexual reproduction would then disappear.

This highly abstract technology whose processes are carried out invisibly in microscopic structures can be represented only by means of models and in the form of genetic maps. It is dependent upon visualization and symbolic processing—for instance, in film images.

Popular culture spreads the word about the potential defects of this technology in narratives and images that are as trivial as they are candid, concentrating upon the negative consequences of genetic engineering. It serves up variations on a principal motif that is essentially characterized by the cultural patterns of Christianity: the failure of the dream of the bachelor machine and the delineation of the boundaries of science at the creation of life. In films, the relationship between independent science and the desire to industrially and militarily exploit the findings of that research have been formulated with crass clarity from the very start. They show that capitalism as a highly responsive system strives toward the perfection of mankind and nature, though not in the form of the elimination of suffering and infirmities, but rather by implementing complete industrial producibility and marketability in all of life's components and microstructures.

In the age of technical reproducibility, it is not only the image that can be infinitely duplicated and endlessly redesigned, but life itself as well. The fusion of genetic engineering with digital

media and its forms of visualization binds these together into a dual mode of thought of original and copy. In this context, the discussion about the permissibility of an inventor copyrighting or patenting a life form comes as no surprise.

Many parents consider their children as works that have been formed by them. The "work" character of an offspring regarded as the copy of an original underscores the uniqueness of the parents who mean to preserve themselves for posterity in a genetically-optimized form.

With this process of "baby tuning," parents approach a potentially utopian conception of the creative artist, except that artists have not yet begun to collaborate with genetic engineers in order to come up with another purely aesthetically motivated variant alongside the industrially formed genetic world. It is a well-known insight that in order to open up new realms of perception, art cannot get around intervening in the existing industrial norms (see Kittler 1989).

An approach like the *transgenic art* of Eduardo Kac updates the point of artistic connectivity, generates a living object which offers an occasion for communication, and reformulates the necessary question as to the position of art in society. In "Künstler als Gärtner" (Artist as Gardener), the *Kunstforum International* volume published by Paolo Bianchi (Vol. 145, May—June 1999), the dimension of genetic manipulation of plants and nature plays practically no role at all. The artist remains on the level of the tender of a tiny plot playing only with materials available commercially.

Art that sets new animals or plants into the world would be a field test directly intervening in everyday life. It is difficult to legitimate free artistic experiments of this kind since art must assume responsibility for that which it creates and releases.

In the visual design and realization of imaginary creation myths, film has an easier time of it. The medium can leave behind the stage of modeled simulation and develop overdrawn proxies for genetic engineering that are devoid of consequences for real life.

In general, it can be said that the subject of genetic engineering was only treated indirectly in recent Hollywood films up to the mid-1990s—for the most part, as genetic mutations arising as a result of atomic catastrophes. I would now like to investigate whether—and if so, how—the contradictory social discourse surrounding genetic engineering has also found expression in film images, particularly focusing on the motif of the artificiality of foodstuffs, the depiction of scientific experiments, and, especially, the image of the laboratory.

Smart food

Large-scale cultivation of genetically-altered soybeans, potatoes, squash and cotton has been going on since the mid-'90s. Furthermore, plants are being implanted with human genes via "plantibodies." Corn, soybean and tobacco plants produce antibodies and proteins. The uproar caused by this intermingling of plant and human elements and by the foodstuffs and medicines that have been yielded by these efforts overlooks the fact that, for quite some time, a new culture of food and eating has existed that has adapted to the needs of the mobile and isolated lifestyles of contemporary men and women.

Astronaut meals and microwave cooking, designer cuisine and brain food, package soups, and foodstuffs fortified with enzymes or calf rennet are no longer exceptional phenomena, but rather the results of conventional processes in large-scale industrial food production. This has

long since abandoned any connection to traditional agriculture; it is the manufacture of foods and their components—beginning with white bread and hamburgers—according to established norms. New forms of food that combine elements of nutrition and medicine have already begun to appear on supermarket shelves—for example, in the form of LC1 yogurt. Medicinal foods are supplemented by "nootropics" (smart drugs and drinks) and "psychotropics" (MDMA, drugs to enhance the performance of the brain). Their goal is cerebral stimulation and the extension of the body, a comprehensive physical tune-up. They are by no means the antithesis of healthy food; rather, in a "fit for fun" culture, they are a welcome supplement to fortify and invigorate the body. So-called "novel foods" are considered to be compatible with fruits and vegetables cultivated using ecological farming methods.

Smart drinks and smart drugs, powder cuisine, tune-up for the brain, nonfood negate the very idea of organic or natural value of food, blur categories of drugs and food. (Morse 1994, 161)

For Margaret Morse, changes in the ways of obtaining nutrition are forms of oral incorporation which she describes as the dominant mode of subject construction on the part of a society characterized by new technologies (see Morse 1994). This includes the mixture of two bodies which can fluctuate between highly divergent dimensional magnitudes—for example, by ingesting food or taking pills.

Untreated, natural, fresh food (beef) has increasingly turned into a hazard as a result of human intervention (antibiotics, cattle feed). On the other hand, the simulated freshness of a Flavr-Savr tomato—a human product resulting from genetic engineering and irradiation—promises a higher level of security.

Genetically-altered foodstuffs lose their status as purely organic nutrition. They lack the superficial phenomenon of decay, which banishes varieties of fruit and vegetables to the realm of the undead. The surface level suggests life and naturalness; the rotting remains invisible, having shifted to the interior of the biological structure. In this way, this type of food no longer constitutes a reference to organic life's inevitable death. These natural phenomena are placed into the situation of survivors like the inhabitants of an artificial scenario like Biosphere 2, as Baudrillard so aptly formulated it (see Baudrillard 1994).

Smart food displays a revised relationship to death, since, in many cultures, food has an important place in the symbolic process of exchange with the dead. As an organic substance, it draws a symbolic boundary between life and death. Aside from the process of cooking—which symbolizes the transformation of nature into culture, the cultural dimension of dining—which contrives the exchange between the body, the environment and other individuals—is eliminated. (Morse 1994, 161 refers to Levi-Strauss: *The Raw and the Cooked*). The human being readapts his intake of nutrition to a posthuman existence in artificial worlds.

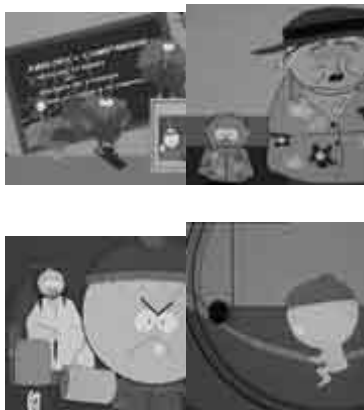
The transformation of the position of preparing and eating food can also be identified in the contemporary cinema, in which eating serves as a backdrop for communication but does not occupy the spotlight (a couple of exceptions are *Tampopo* and *Eat Drink Man Woman*).

As pointed out above, smart food is neither prepared nor eaten as these acts are commonly understood, but rather is directly swallowed, totally in the sense of oral incorporation. This corresponds to the nutrition intake process in many science fiction films; nevertheless, reality is way ahead of its depiction in the movies. The forms of artificial or standardized nutrition that appear in film are reproductions of a tray-top form of food service resembling a TV

dinner designed for a microwave oven, or like the meals served aboard an airplane or in a hospital.

The subject of the diet of the future—edibles produced by biotechnology, for instance—is not even treated in films because the images of food mutation to which filmmakers would have to resort would be too drastic to visualize their invisible, genetically-engineered microstructures. Even if it were important to design visions of the diet of the future, this simply does not occur because it would offend the viewing public. The film would represent a violation of cultural and temporal boundaries of certain culinary cultural zones—boundaries which are, in reality, delineated by nausea and revulsion. The revelation of the origin of society's chief source of nutrition—like the standardized green food wafers in the film *Soilent Green*, which are indeed a natural product because their raw material is of human origin—is a blow to the midsection for moviegoers. Pictures of a genetically-engineered plant from which a dangerous foodstuff is manufactured would existentially mortify a contemporary movie audience. Thus, what they continue to be served up is a reference to the standardization of the food of the future: meals in ready-to-eat form, industrially preproduced, mechanically eaten, and serving to achieve satiation and survival. The hedonistic element of enjoyment is eliminated.

The South Park Clones



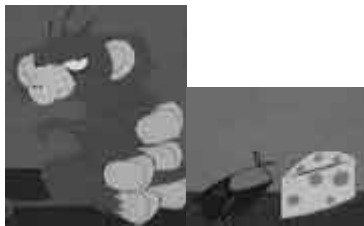
A genetically-manipulated foodstuff also comes into play in the US cartoon series South Park. Genetic engineering and cloning are recurring features of the program, which will premiere in Europe this fall. This is an indication of the important position of this key technology. The fate of the Simpson family in the series The Simpsons is closely connected with atomic energy since father Homer works in a nuclear power plant, whereas cloning, as a well-intentioned but useless improvement upon nature, has already become a part of everyday life in South Park. The friendly but helpless scientist named Mephesto provides accommodations in his genetics lab for a gorilla with the wings of a housefly, for fish with rabbits' ears called "bunnyfish," as well as for a genetically-engineered cheese. Moreover, Mephesto, the lovable flower-power hippie, is followed around by his miniaturized clone sporting a floral shirt. Catastrophically designed creatures break out of the genetics laboratory at regular intervals—for example, a vicious clone of Stan, one of the children, or (in episode 109 "Starvin' Marvin"), turkeys that have become wild and destroy the village of South Park.

Innovations in genetic engineering have a matter-of-fact, almost incidental character in this series. In school, arts and crafts have been replaced by cloning, and the design of new creatures is assigned for homework. As a result of competitive pressure in the classroom, the children's experiments get out of control—above all, Stan's clone, which was generated

through the theft of a hair and thus as a result of genetic piracy. In *South Park*, one is still capable of clearly recognizing the clones, and the one of Stan is completely misshapen.

The series shows the uncontrolled vegetative proliferation of forms of life that are generated by this asexual reproduction technology. Nevertheless, the sexually-produced human life forms prove to be more threatening than those created by genetic engineering.

The view of the future of sexual reproduction imparted by *South Park* is a gloomy one. Romantic love as foreplay to procreation has no place here. Women play a subordinate role, consistent with artificial reproduction having become an important factor. Stan's sister is a monster who wears braces on her teeth and mercilessly oppresses even Stan's giant clone. The animals are the heirs to the romantic ritual of love: for a cloning homework assignment, an elephant and Fluffy the pig are serenaded with romantic love songs to get them in the mood. The spawn of this pairing is a hybrid creature who wears glasses, a combination of a pig, an elephant and Mr. Harrison, the biology teacher (Episode 105 "An Elephant Makes Love to a Pig").



Special mention should be made of episode 218 "Prehistoric Ice Man." During a mission to rescue Kyle, the South Park children discover a prehistoric man preserved in a block of ice. Genetic engineer Mephesto draws a connection to the present inhabitants of South Park and wants to reconstruct the intervening generations. He employs genetic engineering to reproduce an extinct form of life that has been preserved in ice—a motif that frequently comes up in film.

In this series, everything feasible is tried out; ethical-moral boundaries can be shifted at will and are redrawn according to the dictates of a particular situation—for example, if parents want to get a detrimental TV series canceled for the sake of their children, and do so at the cost of human lives.

The subject of *South Park* is the general deviation from the norm. Besides the deviation from sexual norms (such as sodomy in the episode "Chicken Lover," homosexual dogs in the episode "Big Gay Al's Big Gay Boat Ride,") or the portrayal of poverty in the case of Kenny, monstrosities like Kartmann's grotesque obesity turn out to be everyday occurrences, so that

the escaped mutants and extraordinary doppelgängers that appear from time to time do not cause all that much of a stir.

Double: Identical with One's Self

Inherent in the process of cloning that is so beloved in South Park is a modern horror vision of the design and duplication of the human body. In contrast, among so-called "primitives," (Baudrillard 1983, 221, also see Freud 1970) doubles are a form of insurance against the demise of the ego. The double is a partner with whom a "primitive" carries on a visible exchange with an invisible part of himself. Christian cultures have transformed the double from a guarantor of continued existence to an eerie harbinger of death. The technical media of photography and film make clear the transformation of the double into a vision of horror. Shadow, spirit and reflection are eliminated as a medium of exchange with the self through the emergence of the Christian conception of the soul.

The desire for the duplication of the ego in the identically designed version of a clone is nourished by the hope for personal immortality of body and consciousness. Here as well, the culture of everyday life has a big lead in the formulation of these desires. A US firm based in Colorado has taken the idea from Japan; it is marketing *My Twin Doll*, a doppelgänger doll produced on the basis of a photograph, so that parents can already provide their children with a toy clone. And in the current music video *All is Full of Love*, the Icelandic singer Björk deals with the desire for duplication and narcissistic unification with one's own physically-present figure. In the video, a clone is designed as an animated anthropomorphic robot in her own identical image.

Each new technological phase produces a different visual reference to duplication. Björk's video ought to be assigned to the phase of robots, androids and cyborgs, although the depiction goes beyond this to a phase of identical cloning featuring the transfer of human consciousness and feelings. The figure of the clone has already clearly manifested itself on the horizon of the visual imagination of duplication, and will populate the image realms of the next millennium.

The anthropomorphic robot is a servile element that can get out of control. The clone, on the other hand, is the duplication of an individual and the outlet for aggressive tendencies on the part of the cloned person. The clone makes it possible to perceive the self as a separate entity, in that it confronts the human being with his/her most primal capacities and thus disrupts self-perception in the projection. The double—a living creature and not a mechanical one—is especially horrifying because its behavior is based upon the genetic predisposition of the cloned individual. The double serves to take upon itself the negative powers of the original, and is therefore called to account for its behavior in order to exonerate the original in a process of catharsis.

The clone is an emanation of an individual's self, not that of a stranger who materially confronts the original. Only the perfect *doppelgänger* does not seem be dangerous, whereby film shows that suddenly deviant behavior is necessary. It must be possible to differentiate between the original and the clone in order to counteract the human fear of being replaced by one's own double. The impossibility of differentiating between the two calls into question the uniqueness—and thus the worth—of the individual. The medium of film also shows that duplication in the desirable form of identical reproduction is impossible. The trouble caused by the double who has proclaimed his independence is necessary because it raises the question of differentiating between the original and the copy.

Genetic Fingerprint

Along with the motif of the double, an additional element of genetic engineering has solidly established itself in popular media. In contemporary detective stories like *The Net* or the German TV series *Tatort* (*The Scene of the Crime*), the genetic fingerprint has become a form of evidence taken completely for granted. The myth of the genetic fingerprint as unassailable truth consolidates itself here. On the other hand, it is gradually becoming clear that genetic tests are dependent upon their medical interpretation. The characterization of the explication of the genetic profile as a genetic horoscope illustrates that the predictions based upon genetic analysis are not inviolable, so that patients who are genetically predestined to suffer from a particular disease must not necessarily reckon with the illness running its deadly course (*Der Spiegel*, No. 20, May 17, 1999, p. 288).

A film like *Gattaca* does away with the widespread opinion of the omnipotence of genes. It contradicts the superficial loveliness of genes that can be read and human beings who can be interpreted by emphasizing the necessary context of the development of genetic information within social circumstances. Vincent enters the world by natural birth, which automatically confers to him a place among society's losers, since one's course of life is genetically predetermined. His antithesis is Gerome, whose visible physical affliction—he has been crippled by an accident—makes clear the invalidity of the genetic fulfillment of norms. He cannot profit from his genetically privileged position since genetic and physical representations sharply diverge from one another in his case. This offers Vincent the chance to assume Gerome's genetic profile in order to fulfill his dream of a flight to another planet.

The discrimination inherent in the vision of a society controlled by commercial firms is aimed at something that is not recognizable to the naked eye. The all-encompassing genetic control exerted by an organized industrial imperium imperils anyone losing a hair from his/her eyebrow. Casually disposed-of bodily wastes become key pieces of evidence. *Gattaca* thus also indirectly addresses the issue of genetic piracy, whereby one can acquire the genes of other persons by coming into possession of minute amounts of their bodily secretions.

The myth of the indisputability of the genetic fingerprint is called into question by *Gattaca*. Doubt about the incorruptability of the genetic fingerprint is raised by the additional control mechanisms that introduce bodily fluids such as blood and urine into identity tests. A person's genetic composition and genetic purity are inspected by machine. The "incorruptible" machine accepts Vincent's artificial genetic profile. Thus, the role of the one who evaluates the data is addressed in a highly conflicted way. On one hand, the human being proves that intelligence enables him to get around the incorruptible control by machines; on the other hand, it is a human who constitutes the gateway to manipulation since the swindle can succeed only as a result of the presence of a doctor who is additionally required to accept the bodily fluids.

An additional example of the limited meaningfulness of an isolated set of genetic information is provided by the 1978 film *Boys from Brazil*. Nazis in the Brazilian jungle clone Adolf Hitler with the intention of taking over control of the world by means of these clones. It is stipulated that the clones grow up under the same conditions as Adolf Hitler had done. Therefore, families in Germany are selected to adopt the young boys and, for example, the boys' fathers must die when the boys are 11 years old. In the showdown sequence, an Adolf Hitler clone must decide whose advice to accept—and he does not choose Joseph Mengele, but rather Simon Wiesenthal.

The films described above make it clear—in a trivial manner—that, even in the case of an identical genetic constitution, one's social environment and social relationships are decisive. Human beings are not prisoners in a genetic complex that can be deconstructed by means of bio-semiotics. The human body is integrated into a social and temporal context; if this body, which essentially characterizes the human being and his/her genetic constitution, is not taken into consideration, the individual's set of genetic information remains a construct of scant meaning and an abstract simulcrum.

Reconstructions and Hybrid Creatures: Cloning in Film

The preferred venues in which to take up the issues of biotechnology and genetic engineering are the science fiction and horror genres. Encouraged by the news of Dolly in 1997, many sci-fi films having to do with the cloning of life (*The Relic*, *DNA*, *Mimic* and, above all, *Alien: Resurrection*) came out that year. These films package fears and concerns; a potentially positive side is rarely shown. Genetic engineering has replaced nuclear technology and natural catastrophes as the hotbed of destruction. It is deployed by uniting the megalomaniacal fantasies of individual scientists with the vast resources of multinational firms.

In films, genetic engineering produces only mutations—uncontrollable forms of life that fail to function according to plan. Always lurking invisibly within the structures of an organism to be reconstrued is something inexplicable or evil which is called to life through the lust for wealth or power. It then goes out of control and destroys human life. Thus, for example, a plot synopsis of the 1997 film *DNA*: scientists extract DNA from the prehistoric bones of an extinct creature found in the jungles of Borneo; the creature is called to life by means of an enzyme; it escapes from the jungle laboratory, hunts down humans in the jungle and kills them.

The origin of the genetic raw material is explained in similar fashion every time—scientists discover something in an out-of-the-way place like a jungle and, in a remote laboratory, extract DNA from some raw material to create new life. The scientist is a naive individual unfamiliar with the realities of life, and his invention is stolen from him by other unscrupulous scientists, who immediately recognize the significance of the invention and sell it.

Films like *Jurassic Park* have to do with the reanimation of an extinct species. There is a scene bringing together both generations of dinosaurs, whereby the reconstructed one destroys the skeleton of his ancestors. The reanimation of an extinct creature constitutes an effort to turn back the process of evolution and to recreate that which mankind has destroyed over the course of civilization. The genetically-reconstrued organisms undergo involuntary time travel. Here, the symbolic cycle developed by Žižek (see Žižek 1991) manifests itself. If an extinct creature returns, it takes symbolic revenge upon the living, whose ancestors had caused the extinction of a species that had once lived among them. The guilt to be atoned for is passed down from generation to generation.

Another significant direction in the portrayal of genetic engineering is the fear of mixing genetic material from humans and animals, and its visible morphological effects. *The Fly* is an example of this. The process of transformation from one species to another takes center stage in such films—for instance, werewolf transformations which, however, originally stem from the realm of superstition and magical metamorphoses. Furthermore, hybrid creatures in the cinema are part of a long visual tradition. Myths from Antiquity contain creatures that are part

human and part animal, including extremely powerful, godly manifestations such as Pegasus and fearful beasts like the Minotaur.

The hybrid creatures of film allow for a simple, dualistic stylization—the human component represents good, the animal part stands for that which is compulsive, animalistic and evil. The point of departure for the execution of evil thus always lies outside of the human element. The mixture with genetic material from animals legitimizes the release of a power which kills in a way that is uncontrollable, orgiastic and full of lust.

In the 1997 film *Mimic*, cockroaches that have been killing children in New York are to be wiped out by their genetically-modified counterparts. Once they have been set loose, the members of the new species do not die according to plan, but instead kill the humans they encounter in the city's underground. Since the insect-creatures can assume human form, there are times when it is impossible to differentiate between good and evil, human and animal.

The motif of mixture also plays the decisive role in the 1997 film *Alien: Resurrection*, although the *mise en scène* is rather more subtle here. After 200 years, Ripley is reconstructed by means of cloning from blood samples in order to extract the genetic traces of the alien queen. Following several failed attempts, the genes of Ripley and the alien are unintentionally mingled. The Ripley clone #8 suddenly displays character traits and morphological features of an alien and a human being. What takes place at this point is the step-by-step cessation of the animalistic or extraterrestrial creature being equated with evil, because the protagonist is now a mixture of both and reflects this as well. But that does not completely finish the story either, because Ripley, in turn, is the victim of this genetic mix-up and did not choose to go this way herself.

The four *Alien* films have an insect-like process of reproduction at their centerpoint, and thus symbolize turning away from sexual reproduction. The hatching of the eggs in the alien cave, the pupation of the human body, the parasitic nesting of alien clones in other bodies, their break-out from these host bodies, and the alien queen's function as a tirelessly-producing birth machine reveal a threatening vision of autonomous female reproduction.

Since Ripley breaks out of female role constraints, she is predestined to play the part of the actively-reproducing host body. This becomes a place of danger for the various different patriarchic societies of the individual *Alien* sequels. The melding of Ripley and the alien queen equates the natural female body with the phylogenetic mother of the alien. Both thus represent a similar, internally emergent, uterine danger.

Alien: The Resurrection constitutes a cinematic variant of the motif of woman giving birth to disaster. This sort of portrayal is a direct descendant of stereotypical, deranged fantasies dating back to the days of the persecution of witches, whereby an important element in the conviction of a witch was the fulfillment of a third level of proof—the physical union of the woman with a demon or with Satan himself. This is a continually recurring cinematic motif—the imagination of the forbidden union of a woman with an extraterrestrial or a being stemming from the realm of evil (*Rosemary's Baby*) that forces her to give birth to a hybrid creature.

The Lab: Place of Evil Spawned by Men and Involuntary Field Tests

The difficulty of visually depicting what goes on in a genetic engineering laboratory manifests itself in films in the employment over and over again of visual formulas. The

hypervisualization of escaping mutants lies in the potential impossibility of portraying the process of the human creation of life. The inscrutability of a scientifically-generated order and the possibility of a monstrosity laying hidden within microscopic structures stir up fear of the failure of visual perception and of the inability to differentiate between clone and original (for example, in *Return of the Body Snatchers*) and necessarily lead to the use of exaggerated visual symbols.

Of particular importance are the places where mutations are generated. These are artificial worlds removed from everyday life such as space stations or impenetrable jungles, which hold a sequestered sub-realm at their core: the laboratory.

The process of inverting the relationship between hierarchically ordered interior and exterior spaces plays an essential role over the course of these films. The boundaries of these spaces are not to be violated—i.e. the creature is not allowed to get out, and no one is permitted to get in. The inaccessibility and the isolation of the laboratory must be ensured. These films indicate the difficulty of entering these areas through the use of visual elements like multiple hatches and door systems that close behind one another and permit entry only to persons identified by documents, chipcard or fingerprint.

When misfortune begins to run its course, the snail-shaped path of the process of penetration further and further inside the labyrinthine space becomes inverted. The isolation and the absence of a clearly understandable layout now turn against human beings. All of what subsequently takes place manifests a countermovement from a closed-off interior towards the outside. Once the dangerous form of life sets out on its way outside the laboratory, it is already too late to intervene. The film imagines that which is referred to as a field test in the debate surrounding genetic engineering.

The laboratory spaces are sterile and artificially illuminated. In the film *Gattaca*, greenish light predominates throughout, so that the impression is given of a universal laboratory inhabited by the species *Homo sapiens*. In several of the films, laboratory glassware containing fetuses of the species to be created can be seen. The unsuccessful attempts to create life artificially are put on display as a warning—seemingly safe behind glass.

Also to be found in these laboratories are colored, fluorescent fluids and apparatuses connected by tubes, which subliminally are more suggestive of processes of alchemy than the scientific character of the life creation process. The laboratory represents and imagines a possible form of a male uterus. It is a technological maternity ward where life is meant to originate and the only space in which male-generated life can exist. As soon as it leaves this space—no matter how dangerous it is—it is headed toward its demise.

These images contrast natural, "impure" birth from out of a female's body cavity with the clinical, scientifically-optimized creation of life in the laboratory. Nevertheless, the dream of autonomous male reproduction is a failure. Once again, the utopian vision of the bachelor machine is shattered, because life cannot be separated from the female element of creation. These films show that men can indeed produce their essential aggressiveness on their own, but they are unable to preserve it.

Previously, everything seemed to come forth from the womb of nature and a servile femininity. The way in which the science fiction genre deals with genetic engineering reveals that the vision of male independence from female birth and nurturing is condemned to failure. The concentration on "smart food" or astronaut meals in these films indicates the presence of

a purely male society. A process of food preparation that is limited to opening a vacuum package, adding water and stirring—to instantaneously whipping up some industrially manufactured ingredients—reinforces these male strivings toward autonomy. The former protectress of the hearth fire and the ceremonial preparer of meals is suspended, since nutrition has already been made ready for immediate oral consumption. Standardized foods turn up in films in places where there are either few women present or where they have assumed positions other than the usual stereotypical roles. It is an open question as to whether this act of liberation has led to participatory tasks being assigned to the female protagonists.

The possibility of modifying plants and animals by means of genetic engineering, of filling man's environment with smart objects, gives mankind cause to no longer sink in Promethean shame (see Anders 1992), but rather to formulate the demand that he wants to become materially—that is, physically—immortal just like the objects he has created. In the framework of this demand which stems from the artificially-generated nature of things in general, mankind does not tire of incessantly producing new images in the media that are available. In film, however, autonomous reproduction—both male and female—doesn't stand a chance.

In its treatment of the theme of genetic engineering, the Hollywood film shows itself to be a conservative medium. As the end of the millennium approaches, it assumes a position solidly within the Christian tradition of illustrating the apocalyptic consequences for human beings who dare to appropriate the role of the creator. Film becomes a moral institution, whereby these interventions are interpreted as human presumptuousness and punished appropriately.

All paths of the imagination that have reached this point make reference to the limitation of female and male roles to dualistic sexual reproduction and their limited possibilities to break out of these roles. Utopias envisioning the generation of peaceful clones who, beyond a form of production by means of an industrial complex, offer men and women a new and fulfilling form of artificial reproduction, have not yet been visualized.

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The illustrations of *South Park* were downloaded from the following websites:

The South Park Mini Image Archive

<http://www.stefanmaxwell.freemove.co.uk/minipic.html>

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