

Humanimals, huchines and glokin

Bodies and medical technology

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De auteur kijkt naar medische technologie en de invloed van het gebruik en de mogelijkheden van deze technologie op ervaringen van zelf en het lichaam. Het artikel is een verkenning van de ambiguïteiten en onzekerheden van mensen die worden veroorzaakt door invasies, indringing en manipulering van het lichaam door technologie. De auteur bespreekt twee kwesties: wie is de eigenaar van het lichaam en wie zit er in het lichaam. Ze beargumenteert dat het lichaam en zelf een belichaming is van een 'stroom' en dat erover moet worden gestreden en onderhandeld.

[medische technologie, lichaam, zelf, ervaring, ambiguïteit]

Beethoven's hair and Einstein's brain

When Beethoven died, one of his students cut a lock of hair from Beethoven's head (although Beethoven was almost bald). The lock of hair came into the United States, where the McCrone Research Institute in Chicago showed by chemical analysis that Beethoven was lead poisoned. Beethoven's deafness and irritability could be attributed to this poisoning. DNA analyses have defined the greater part of Beethoven's genetic makeup. What is also interesting is that the lock of hair had disappeared for a long time, from 1827 until 1994 its travel is grossly unknown. It was a strange sort of Kula ring, because it played a small part in the efforts of a village of Danes to smuggle out a few hundred Jews. It is known that in October 1943, Jews who had been safe in Denmark became the targets of Gestapo raids. The inhabitants of the village of Gilleje engaged in an effort to ferry them to Sweden. Along its way, the lock of hair came into the hands of a village doctor. His adopted daughter sold it to Sotheby's and it was then sold to the Brilliant Institute at the State University of San Jose and later to the McCrone Institute.

The travel and 'disappearance' of Einstein's brain is a similar story. His brain reappeared in 1999. According to Paterniti's *Driving Mr. Albert*, the brain was on an old warehouse shelf for decades, and was brought back and forth across the U.S. by Thomas Harvey, a pathologist who performed Einstein's autopsy in 1955. Harvey in-

tended to give the brain to Einstein's daughter, but he decided later to give it to the lab from which it was stolen. Neuro-anatomists studied the brain in 2000 and they reported abnormalities in the parietal region that may account for Einstein's extraordinary gifts.

Beethoven's hair and Einstein's brain travelled around the world. These parts were partly used to reveal the secrets of geniuses by examining their DNA. The examples show that the human body is claimed and sometimes 'snatched' by different parties and does not belong to the individual only. Bodies and body parts are contested by those parties that have different interests: scientists who want to analyse brains or DNA; family, who claim the rights to the body; or others who want to exchange the parts for services or money. The Kula ring, the movement of exchange, is still alive. Nowadays, it is not the shells that circulate and attract the attention of many, but human material like organs, genes or tissues.¹ Of course, circulation of human bodies and body parts is not new. Slaves, cheap labour force, immigrants, and dead 'exotic' bodies to be exhibited in Western museums have travelled around the world. But, according to Scheper-Hughes (1998), this travelling is more transparent than ever. The author speaks of "gross violations in the procurement and distribution of human organs in transplant surgery" (which is her object of research). Also other parts of human bodies travel around: blood samples, tissues, eggs and sperm. Biotechnology and medical technology are central 'tools' in the process of physical expropriation and the trade and commodification of the human body and body parts. The scale of the 'Kula ring' and the transparency of the distribution of human bodies put forward the question of the meaning and effects of these processes on the experience of the body and the self. With 'body' I mean the individual, social and political body (Scheper-Hughes & Lock 1987).

In this short paper, I want to focus on the medical technologies that evict and move physical parts of the human body and the effects of those activities for a robbed and enriched human (individual, social and political) body. My aim is modest; I want to explore but a few aspects. In the first section I discuss the question of to whom the body belongs. Is it an entailed belonging of the individual, who is in power and control? Or does the body belong to others, who can make the individual body a political body, 'a site of all control' and manipulation? What does this mean for the experience of the self as a social body? In the second section I discuss the effects of the use of biotechnology and medical technology on the experience of the individual body.

Some theoretical thoughts on the body and the self

There is a paradox in the experience of the body. On the one hand, we have to speak about the autonomous, individual body, which is experienced as a 'bounded, unique, more or less integrated motivational and cognitive universe, a dynamic centre of awareness, emotion, judgment, and action organized into a distinctive whole and set contrastively both against other such wholes and against a social and natural background" (Geertz 1977: 9). On the other hand, the human body has become the focus and locus of political, commercial and 'medical' powers that need the human body. Many authors have speculated on and described the consequences of this paradox.

It is assumed that the articulation of the individual body boundaries and the self are to be sides of the same coin. The boundaries are controlled individually and the body has become 'closed' in relation to the outside world (Falk 1994: 25). The right and access to this body unambiguously belong to the individual. Accordingly, the self is thought to be experienced as a consistent whole. Kohut and Wolf argue that

Once the self has crystallized in the interplay of inherited and environmental factors, it aims towards the realization of its own specific program of action The patterns of ambition, skills, and goals; the tensions between them; the program of action they create; and the activities that strive towards the realization of this program are all experienced as continuous in space and time – they are the self, an independent centre of initiative, an independent recipient of impressions (Kohut & Wolf 1978: 414, cited in Ewing 1990).

Ewing (1990) rejects this idea of the self. She argues that it would be better to speak of "shifting selves" and the "illusion of wholeness", because the self and its representations are based in cultural systems that are by no means coherent systems, but "organized sets of symbols, resting on distinctive underlying principles" (Ewing 1990: 254). From this perspective, one may understand why human beings shift their behaviour towards their body. Turner (1994) speaks of "the triumph of individualistic consumerism and its crowning social achievement, the creation of a socially guaranteed space in which individual consumers can produce their own identities" (p. 27). He speaks of "a new politics of personal empowerment and emancipation" and 'the basic power to appropriate one's own body' (Turner 1994: 28). However, both Turner (1994) and Giddens (1991) have stated that this "triumph" has "unleashed a new collective politics of identity". The body has become the focus and locus of the contradiction between empowerment and repression by the social, cultural and political order of contemporary capitalism (cf. Turner 1994: 46). In fact, according to Turner, we will have to speak about two bodies; the emancipated, self-producing body and the repressed and controlled body. This contradiction causes, according to Giddens (1991), "tribulations of the self". Giddens states that the more tradition loses its hold and the more life is reconstituted in terms of dialectics between the local and the global, the more an individual is forced to negotiate lifestyle choices (Giddens 1991: 5). In this process, commodification is the standardising influence by which capitalism increasingly seeks to shape consumption and monopolise the conditions of production. Choices of the individual are thus by no means 'free'. The development of a global neo-liberal market economy has allowed for a movement around the world of all sorts of 'goods'. Among those goods are bodies and body parts (not only organs, but also genes, blood, tissues, etc.). Powerful medical technology has created new forms of 'bio-economics' and bio-sociality' (Rabinow 1993). The body and its parts are commodified, based on a medically created 'scarcity' of those bodies and parts and 'needs' of people who are forced to make choices and negotiate lifestyles. One can hardly imagine the effects and consequences of those new forms for people's self-perceptions and rights. Scheper-Hughes (1998) has partly answered this question. She describes in *The End of the Body* the organ rings and the commodified body. She pictures a booming global trade in organs and tissues from living and deceased persons to supply a medical business driven

by 'the simple market calculus of supply and demand'. She states that this market "is part of an impressive development and refinement of transplant technologies". Scheper-Hughes further states that the movement of organs follows the routes of capital. People have shown willingness to travel great distances in order to get a transplant, "using both legal and illegal channels" and others have shown their willingness to donate or sell their body parts, often forced by poverty, new ideologies of health and the 'gift'. The author describes a complex flow of bodies and body parts, which is enabled by the power of the market ideology, cultural discourse and changes in perceptions of the value and sacredness of the human body. According to the author, anthropology's task is to recover "the discipline's unrealised radical epistemological promise and a commitment to the 'primacy of the ethical'."

Others have approached the developments in medical high tech from another point of view. They have argued that medical high techs like molecular biology are about to let collapse "the traditional dichotomy between 'nature' and 'culture', between 'biology' and 'culture'" (Rheinberger 2000: 28). Rheinberger states that the natural and the social can no longer be seen as ontologically different (p. 29). If the author were correct, this would be a clue for anthropology in its ethnographic description of 'self', 'person' or even 'human'. Rheinberger: "We become aware that we live in a world of hybrids for the characterisation of which we run short of categories" (p. 29). This is very much in line with Moore (1996), who states that we are "technologised selves". The consequence, Moore continues, is that the boundaries of the self are expanded or even breached. "The self is no longer, if it ever was, a singular, self-contained entity (like many like to see it, EvD), but a participating, relational one; and one which is no longer simply human" (p. 7). It is not particularly new, but the 'new' medical technologies are so pervasive and intrusive that we can see the self and identity become technologised. Old dichotomies, like we/others, same/not the same, need to be revisited. The idea that modern technology produces individuals who are no longer fully human or who no longer belong to a single social and cultural category is intriguing and needs a perspective, which accounts for "situated and interrelated knowledges and practices, all of which are simultaneously local and global" (Moore 1996: 9). Moreover, according to Scheper-Hughes (1998), reconceptualisation of the body also implies reconceptualisation of other concepts: relations of the body and society, exchange, reciprocity, the gift versus commodity, death, colonial legacies, authority, and scientific and social technologies.

Who owns the body? The State, social bodies and selves

In 1980 a specialist for hairy-cell leukaemia treated John Moore. The physician discovered in Moore's cells a compound which had therapeutic potential. The doctor took out a patent on the cells without the knowledge of Moore. Moore sued the doctor for property theft, stating that his body and parts of it were the undeniable, unique property of the individual. However, the supreme court of California ruled that Moore had no property interest in his body parts.²

Another example is the case of the citizens of Tristan da Cunha (a remote island), who suffered from asthma. They donated blood to develop gene-based medicines after having given their 'informed consent'. Their blood samples were developed into asthma treatment technologies that were eventually sold to Boehringer Ingelheim for 70 million dollars. The asthmatic citizens were unlikely to be able to afford the medicines themselves, should they ever be in need of them.³

A third example is IsoTis, a Dutch producer of human bone and tissue. The company was funded in 1996 by two professors – Van Blitterswijk and De Groot – and specialised in substitute medicine. IsoTis aims at a new generation of human 'spare parts': hips, teeth, veins, etc. The idea is to improve the artificial parts by covering them with thin layers of the patient's bone or tissue. The business is booming. The company applied for 38 patents in 1998. According to Van Blitterswijk "The market is enormous and we clearly fill a need. Our products are perfectly adapted to the demands of the body. It cannot be more perfect, making tissues like the body does." Van Blitterswijk referred to the American company Osiris, which works with 'stem cells', thereby implying that his company is not involved in the trade of 'foreign' human parts.⁴ Although IsoTis stresses that they are not currently engaged in human cloning, one of their employees told some of our students, on a visit to the company, that cloning must not be excluded from their programme in the future.

These are but a few examples of the numerous cases in which human tissues, cells, genes and other body parts are perceived as 'natural' resources. They are harvested and transformed into commodities with added values by companies like Osiris and IsoTis. Sometimes body parts are stored for research. One could remember the scandal of Van Velzen, a Dutch pathologist, who removed the organs of hundreds of deceased children in a British hospital. According to the head of the pathology department of the Westeinde Hospital in the Netherlands, Van Velzen did nothing that was inadmissible. Also in the Netherlands, baby organs are stored without informing the parents after permission for autopsy is obtained. This is, according to the head, in the interest of the parents. Better technologies for storage and improved biotechnologies back up the process of the body becoming a main target of a 'biological gold rush', even to the extent that it is of more worth than the products it produces in agriculture and factories. Such cases are often published in the media and followed by heated public debate. Ethical debates try to answer questions as to how and to what extent medical technologies may be used. However, I will not discuss these debates. I am more interested in what people think are the consequences of the possibilities of medical technologies; in what they imagine that these mean for themselves and their bodies. The example of the people of Tristan da Cunha shows that people often do not know exactly what happens to their bodies and body parts. Even when an informed consent is made, cultural differences and language problems may have triggered the understanding of the people in Tristan da Cunha. My question is what will happen when those people learn that the genotechnology is "built upon a conglomeration of complex alliances between the private and public sectors-alliances among members of industry, academia, and government arranged in a staggering number of ways" (Malinowski & O'Rourke 1996: 181). What would have been the impact on their perceptions of the social body and self? I could not find an answer to this

question in the literature, except in another case, which is described in Moore (1996). The author mentions the case in Malawi, where people refused to work on water installation schemes, particularly when pipelines ran closely to a hospital. The story was that the purpose of the pipes was to pump human blood to South Africa to pay for Lilongwe. The technology transforms social relationships and the social body. Moore states that the boundaries of social selves are expanded and threatened. Of course, the idea that the body has wider boundaries than the skin is not new. What is 'new' is the scale and the means. Genotechnology and genotherapies already have deep impact on the thinking about and the experience of selves and personalities. I will discuss these impacts in the next section, but I want to give one example, which illustrates that the social body – defined as “a natural symbol with which to think about nature, society, and culture” (Scheper-Hughes & Lock 1987) – has got another meaning in the case of organ transplantation. We have relied and still do rely on the body-as-machine metaphor. We describe our health complaints in mechanistic terms that come from industries. We blow our steam off; our batteries are empty; we describe our hearts as pumps. Today, we also use other metaphors to describe our bodies, which come from genetics (the body as a 'double helix', a 'cosmos') or the body as a 'garden in which products can be harvested, re-planted and traded'. I want to elaborate on the latter. The different organs and tissues are clearly distinguished and serve different ends. They have specific tasks. This metaphor of specialised, distinguished functions and ends is also in the world. Some examples are the training of the body and diets. In sports and gymnastics people train not their body as a whole; they separately train different parts. In diets, people distinguish between different elements, each of which has an impact (or is thought to have an impact) on different body parts. Medicines are meant for specific parts and body spaces. Thus, not only is the individual body sequestered from the whole, but also its parts from the body. Scheper-Hughes and Lock (1987) speak of the “loss of bodily integrity, of wholeness, of continuity and relatedness to the rest of the natural and social world.” Relatedness to the world is also about power and control ('the body politic'). Society reproduces and socialises the bodies that are needed. The idea that human bodies are State bodies is explored and studied by scholars like Scheper-Hughes (1998), Lock (1997) and Agamden (1998), who have argued that the human body is no longer the unique property of the individual and his community. The authors study the systems of organ transplants, organ trade and organ donation. The body is nationalised and belongs to the State, which can decide what should be done with the parts. The authors argue that the medical system has constructed an artificial need for body parts. They also constructed a new definition of death: brain death. Medical technologies to keep the body in order for harvesting (*sic!*) have enabled this new definition. Presumed consent is seen by the State as a solution for the shortage of organs, because many people want to donate but not so many actually do. Presumed consent means that the decedent has consented to the harvesting of his organs and tissues after death unless he has recorded objection to the harvest.⁵ Thus, the individual (dead) body does not belong to the individual, nor to his family. The process of dying and death is a clinical process, not a social process. For the individual body, it is often difficult to resist 'the gift of life' and refuse his organs to other members of society.

The body also belongs to the global capitalist system. There exists a certain flow of body parts over the world, which according to Scheper-Hughes (1998) follows the same paths as other goods. The harvest and trade of organs and other body parts on a local and global scale have a strong impact on the experiences of people as social and individual bodies. Parts of different ethnic and cultural groups are implanted into individuals of other groups. This phenomenon is sometimes referred to as the new cannibalism. The global relationships between the different social bodies of the North and the South, the East and the West, can be defined in terms of medical colonialism. People who need organs and can afford them travel to countries where there is no shortage of such body parts. Others travel to donate an organ or agree to donate an organ, which – in turn – travels to a receiving society. One of the effects is that there exists a great deal of mistrust and suspicion among the poor and marginal populations of the world with respect to international and national medicine, medical enterprises and the State. It is striking that in this idiom of mistrust the ‘thing’ (i.e. the technique) and its power are not contested. The miracles of genetic engineering, organ transplant or tissue engineering are often taken for granted. However, it is scientists, doctors, business and the State that are perceived as unpredictable and untrustworthy. For example, in South Africa, poor people in the black townships make the connection between witchcraft and magical medicines,⁶ on the one hand, and organ transplantation, on the other. Illustrative of this is a fragment of an interview Scheper-Hughes had with an older Xhosa woman. The woman heard for the first time about organ transplantation and refused to believe it. She said that it must be a rumour, like the many that circulate on the Cape Flats. When Scheper-Hughes insisted that transplanting was a “bona fide” medical practice, the woman commented: “If what you are saying is true, that the white doctors can take the beating heart from one person who is dead, but not truly dead, and put it inside another person to give him strength and life, then these doctors are witches just like ours” (Scheper-Hughes 1998). Also in other disadvantaged parts of the world, the poor feel themselves powerless. They feel that they – as poor – are the victims. Giddens (1991) speaks of “ontological insecurity and existential fear”. The author writes: “Basic trust (a necessity of ontological security, EvD) is connected in an essential way to the interpersonal organisation of time and space” (Giddens 1991: 38). It is suggested that many people lack this basic trust nowadays. As a consequence, people are anxious in the sense that they cannot develop trust in an overall secure, ethical system.⁷ Anxiety is expressed in the many films, books, urban legends and rumours that travel around the world. They are produced everywhere in different versions and have in common that the mala fide others are blamed. These others can be doctors, criminals, state police or foreigners.⁸ There is a strong link between poverty, rich strangers, white witch doctors, criminality, politics and business. Frankenstein’s revival?⁹ In the stories, different events tend to be merged into a ‘new’ idiom of distress or dis-ease, in which the body has become a body-with-organs (the anatomical body of medical discourse), a body-without-organs (the political body, Deleuze and Guattari 1988) and a body-for-organs. In this idiom the dichotomy of ‘haves/have-nots’ not only gets its meaning by the economic situation, but also – increasingly – by people’s bodies. The body filters ‘human unrest, dissatisfaction, longing, and protest into the idiom of sickness’ (Scheper-Hughes & Lock 1987).

Who is in the body? Individual bodies and experiences of the self

In Boileau's and Narcejac's novel – *Et mon tout est un homme* – persons who need limbs and various other body parts get those of a murderer. One person gets the murderer's arm and fears becoming a murderer himself.

Body image is closely related to conceptions of the self.¹⁰ In the example of the novel, the experience of the self is closely related to the (criminal) other. The theme is well known: the belief in the transfer of characteristics of the donor and in physical, mental, emotional and intellectual changes of the self. Inspired by this idea, one of my students, Andrea Hak, did research among organ receivers in the Netherlands (Hak 2002). Hak based the hypothesis of changes in the self on the literature of Heyink (1992), Simmons et al. (1977), Sylvia et al. (1997), Wiebel-Fanderl (1997) and Youngner (1996). Hak spoke with people in the Netherlands. The heart receivers reported physical changes ('feeling better', 'more energy', 'better condition', etc.) and mental changes ('feeling euphoric'), but assigned these changes to medicines and the donor heart. This organ was perceived as a 'pump', 'a machine' or a 'big muscle'; no psychological or personality changes were reported. However, the organ receivers told Hak that they knew patients who believed to be changed. They pointed to other parts of the Netherlands, to South Africa or to the U.S., saying that those people were 'emotional'. Hak also discovered ambivalence in the accounts of her informants. They had told her that the new heart was nothing but a machine, but on other occasions they referred to personal qualities of the donor they believed to have received. Another interesting finding was that almost every informant mentioned feeling 'responsible' for the new heart. It was a gift of which they had to take care, especially since the gift was non-reciprocal. Hak argues that the kind of idiom (the heart as a machine) of the patients was strongly influenced by the way doctors speak about it.

Advocates of medical technologies like transplantation and genetic manipulation argue that racism will disappear, but opponents are reluctant to accept the idea that by transplantation or genotechnology different ethnic groups will merge. Maybe, bodies merge, but psychologically a person may have difficulties in accepting a body part of a different ethnic group. Schepers-Hughes (1998) reports a case of a white South African who received a heart of a black person. He had to accept it, but he said he did not feel good about it.

There is a difference between foreign (human) body parts and artificial parts. Machines and artefacts of polymer or steel as parts of our bodies have become well accepted. The body is metaphorised as a machine since a long period (Vroon & Draaisma 1985) and machines have become indispensable in our lives. The late twentieth-century machines have made ambiguous the difference between the natural body and artificial body (cf. Haraway 1991: 152). Hak's example shows that machines can be lively and are considered as part of the body of flesh and blood. But machines sometimes betray. Hak recounts an interesting anecdote about two young men, each of whom lived on a machine, a heart mate. Both were waiting for a donor heart. During the conversation Hak had with the men, she could observe that emotions and reactions people usually hide became obvious. When a young nurse passed by, the machines start to beat faster.

When the men became nervous or annoyed, the machine accelerated. This was embarrassing for the men. One of the men said that he would like to have the machine or a part of it when he was transplanted, because it had become part of his body.

People would have different feelings should they have animal parts in their bodies. Hak's informants told her that if they had to undergo xeno transplantation, they would have problems with the idea of having an animal heart. "Animals are lower." Such practice would put forward a debate about humanness. I remember a colleague mentioning a debate in Finland (Honkasalo, personal communication) when Advanced Cell technology in Massachusetts announced in 1998 that they had managed to take the nucleus from a cell from Dr Jose Cibelli and inserted it into a cow's egg. The egg began to divide and the human genes were activated. The issue was whether one has to speak of a human being or an animal in such cases. And, supposing that the being had grown into an adult, could it be eaten? If it was eaten, could people be cannibals? This debate was speculative, but in other cases the insertion of animal or human genes into humans or animals will result in a new definition of the categories.

It is not only organs or tissues that will influence the experiences of self and body imagery. Genetic engineering and manipulation put forward interesting questions about transformation of self-experience. Their genes will increasingly define individual bodies. The perception of blood as a symbol of human life, which transfers physical and mental characteristics of the parents to children and within families, is an ancient one. "It's in my blood." is a common expression. Nowadays this perception has largely changed into the genes as symbol of heredity and human life. "It's in my genes," is as common as "It is in the blood." Influenced by optimistic messages about genetic manipulation and engineering, many tend to believe that traits like aggression, homosexuality, anxiety or obesity are coded in DNA. The message is: "Show me your genes and I will tell you who you are" (Heaf 2000). The individual is transformed into a problem of genetic coding. The body has become an object of knowledge and a collection of biotic components, patterned in double helixes and maps. The self connects past and future by the quality of the helix or the map. Although many people do not want to know what disease could be 'in their genes', genetic screening becomes more common. 'DNA' is coming closer to home by means of insurance, employment and law enforcement. Rabinow (1993: 61) states in an article on DNA-typing that "it is important to establish that *culturally* defined groups correspond to *genetic populations*." The definition of a person/self is made within medical standards of the perfect and healthy human being. Sinsheimer, biologist and former chancellor at the University of California, wrote:

The new genetics would permit in principle the conversion of all of the unfit to the highest genetic level... I know there are those who find this concept and this prospect repugnant... They are not among the losers in that chromosomal lottery that so firmly channels our human destinies... [such as] the 50,000,000 'normal Americans with an IQ of less than 90... Equality of opportunity is a noble aim given the currently inescapable genetic diversity of man. But what does equality of opportunity mean to a child born with an IQ of 50? (Cited in Berkowitz 1996).

Nobody wants to be a loser or part of a lottery.... A self has to be a self-without-a-disease. Medical technology like genetics evokes people's anxiety and perplexity. Genetic mutations are constantly occurring in nature. These mutations can be inherited or occur as a result of carcinogens or toxins. People's hope is focussed on gene therapies by which cells are supplied with healthy copies of 'sick genes'. These techniques have 'powerful testimonies' of advocates and strong ethical arguments about the value of human life of opponents. Advocates argue that genetic manipulation will result in a better quality of life. Opponents argue that genetic manipulation has organisational problems. They fear that the practice is poorly regulated and that people can do as they please. They also fear that the diversity of the human species will decrease. People are also increasingly confronted with ambivalent messages about the powers of technology. Contradictory news about the latest research, secrecy, people's too high expectations in terms of the powers of medical high tech, disillusion, and infamous practices all create uncertainty and anxiety. Scientists are inconsistent in giving information and are capable of 'doing more than they say'. There is evidence that the human body as the new space belongs to a small group of people who control the DNA of entire communities. Chaney: "It is time to stop worshipping gods, and aiming at becoming gods" (cited at <http://users.compaqnet.be/pnitya/science/germ.html>). The consequences for the experience of self are those of uncertainty, instability and blurred boundaries.

The dichotomy of sameness/uniqueness of individuals and that of human/animal will take on different meaning. Western religious cultures have stressed the uniqueness and the humanness of individual human beings. To maintain that a human self/body is unique and different from other living species will become more difficult when one looks at the results of DNA-investigations. They suggest that all humans are 99,99% identical and that the number of genes that make human beings human beings (30,000) is little more than the number of genes that make a fruit fly a fruit fly.

The experience of self has become an experience of a body-in-itself. Martin (1992) reports how people picture their bodies and their insides. She gives examples: "Sort of like a landscape", "sort of a crystal quality" (cancer cells), "it looks like a plant", "star war-ish", "Jacques Cousteau-ish", "something like an alien". Martin argues that the self is alienated from the body. The descriptions of the body as a map or a helix or a fabric of tissues or a garden to be harvested are "orientational metaphors" (Lakoff & Johnson 1980) that orient people in the body space and the outer world. The 'ocean', 'cosmos' or 'landscape' become the experiential basis for the body. In the cases of IVF or genetic engineering, a person may experience the body and self as part of an unknown other. The questions "Who am I?" and "Am I healthy?" are difficult to answer, since the donors usually remain anonymous and not all diseases can be predicted before conception. These questions have become important for many and they will try to find the parent. One can hardly imagine what it means for the self-experience of a child who was created to save a brother or sister by donating bone marrow, stem cells or a kidney. In the Netherlands, those children are called *gebruiksbaby's* (consumer babies), which may be an indicator of how society looks at them.

The question "Who is in the body?" is difficult to answer. We have become more familiar with the use of organic material in our bodies like animal parts, other's tissues

and body parts, genotherapies or DNA. Moore (1996) suggests that this will transform concepts of identity and social relationships in the sense that boundaries of selves, subjectivity and collectivities are expanded by technologies. Medical technology challenges the cultural constructs of humanness, belonging and individuality. Haraway (1991) speaks of “cyborgs” that are “cybernetic organisms, a hybrid of machine and organism, a creature of social reality as well as a creature of fiction” (p. 149). The cyborg, according to Haraway, has become our ontology.

Discussion and final remarks

*The individual is a constraint accident,
Not the highest fruit of earth history's labours.*
(Donna Haraway 1991: 387)

This paper is an exploration of the meaning of medical technology for experiences of the self and the body. Technology brings about “fundamental changes in how our bodies are organized and experienced” (Martin 1992: 121). “We are seeing”, Martin continues, “the end of one kind of body and the beginning of another kind of body.” This new body is not the fixed material entity we are used to; it is an “epitome of flux” (Frank 1991: 40). This flux is the transfer, trade and manipulation of body parts, bodies, cells and genes, both on a global and a local scale. People were and are increasingly composed of different ‘materials’: human, animal and machine.

Fundamental in Western epistemology is the opposition between individual and society. The self is identified as having a state of permanent consciousness that is unique to the individual (cf. Schepher-Hughes & Lock 1987). Anthropologists have showed that elsewhere the self differs from the individualistic conception. Schepher-Hughes and Lock give several examples. Sociocentric conceptions of the self may define it in terms of parts: limbs, hair, excretions, nails, etc. Assaults of body parts mean an attack on the person. It shows itself in witchcraft or sorcery accusations. This is in line with the example of the Xhosa woman who spoke with Schepher-Hughes and told her that white doctors did the same as the African witches when they took a beating heart from a body. In other societies a person is conceived as consisting of many selves and the person’s temperament is the result of the domination by a part of the body. Multiple selves are common in altered states of consciousness like possession. These conceptions are known in Western cultures too, but they are often conceptualised as pathological. However, it is striking that, for example, in schizophrenia processes similar to those I have described in this paper occur: alienation from the body, merging with other bodies, anxiety that the body parts will be ‘snatched’ or violated, etc. (Van Dongen 1994).

This puts forward the question of whether the body as an epitome of flux is a basic characteristic of human existence and the self. Ewing (1991) showed how a person constructs the self in different ways against multiple meanings and functions of the body in order to maintain the sense of a coherent and meaningful whole. I do not want

to use the body as a synonym for the self, but the body is the substance for the construction of the self, which is a “mode of presence and engagement in the world” (Csordas 1994: 12).

The processes described in this paper are not new. In his famous article ‘Does the concept of a person vary cross-culturally’, Shweder (1991: 154) states that socialisation of human beings is “terroristic”, which means that persons are “subject to all sorts of invasions, intrusions, and manipulations of their personhood, autonomy and privacy.” Society grants its members territories of the self that seem to be decent and appropriate in the context. However, rapid developments in medical technology, supported by economic and political structures, seem to break down these territories. People will increasingly experience their bodies as situated (cf. Haraway 1991). Boundaries between human and animal, between human/animal and machine and between human bodies are blurred and need to be negotiated in different situations, again and again, because bodies and body parts are interchangeable. In these situations, the body is not only ‘biology’. It is ‘cultural’, because morality, power and symbolic values are at stake in this situated contestation. Thus, the transformation of the body goes beyond consumerism and bio-essentialism. Uncertainty about to whom the body belongs and who is in it will give rise to suspicion and speculation. When parts of bodies are captured in a flow of trade and exchange, this is followed by behaviours that want to decrease this uncertainty.

There are two final remarks to make. Firstly, the effects of the processes in the medical domain, i.e. of medical technology, on the body and the experience of self cannot be isolated from other processes in the world like commercialisation, commodification, capitalist entrepreneurship, specialisation, globalisation and fragmentation. One may wonder if the commodified, fragmented and ‘mixed’ body is a result of medicalisation only. In my opinion, this process of changing experiences of self and body are the consequences of a deeper structural global change, which has accelerated the last couple of decades. Secondly, one has to notice that body parts, animal parts and artificial devices have been used for a very long time. In Western cultures, the body has been the playground for self-(re)making. Often, this (re)making is seen as specific to ‘modern times’. But it is an age-old desire of humankind and for example expressed in the art of painters like the medieval Bosch. One of the first authors who presented the divine right of self-making as a central quality of humankind was Pico della Mirandola. He had God say to Adam:

We have given you, Adam, no visage proper to yourself, not endowment properly your own, in order that whatever place, whatever form, whatever gifts you may, with premeditation, select, these same you may have and possess through your own judgement and decision. [...] We have assigned you, trace for yourself in the lineaments of your own nature. I have placed you at the very centre of the world ... We have made you a creature neither of heaven nor of earth, neither mortal nor immortal, in order that you may, as the free and proud shaper of your own being, fashion yourself in the form you may prefer (Pico della Mirandola 15th century in Cassirer et al. 1948: 224-226).

It seems that people have taken these words to heart.....

Notes

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- 1 The idea of Kula ring will not be elaborated in the frame of this article.
- 2 Example taken from *Body Bazaar* (Andrews & Nelkin 2001).
- 3 Andrews & Nelkin 2001.
- 4 See de Volkskrant, December 30, 1998: "We work like the body", an article about IsoTis of Bram Pols.
- 5 In Europe many countries have adopted or will adopt inform consent, because there is a negative opinion against commercialisation and commodification of human organs and other parts. Countries like Austria, Belgium and France have already adopted this system of donation.
- 6 *Muti* (magical) murderers are remembered by older people. Those murderers removed body part for magical use, i.e. for improving wealth, health or power of the payer.
- 7 According to Human Organ Watch a firm ethics, which could 'protect' people, is lacking in relation to organ transplant, genetic engineering, etc.
- 8 When I read the European urban legends about body snatching, it became obvious that the "other" was often located in North Africa. This other kidnapped harmless tourists. I argue that the legends are used to express "ontological insecurity and existential fear".
- 9 It may not be a coincidence that Rumania considers the building of a Walt Disneynian park of Frankenstein.
- 10 A body image is the individual representation of the body in relationship to other bodies, environment, memories, perceptions, feelings, knowledge and actions.

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