

The Morality of Design:

Some notes on the moral agency of artifacts, users and designers

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Introduction

A core issue in the philosophy of technology has been the non-neutrality of technology. Most scholars in the field agree that technologies actively help to shape culture and society, rather than being neutral means for realizing human ends. Usually, this non-neutrality of technology is analyzed in descriptive terms. But how to take it seriously in a *normative* sense – what could it imply for ethics?

Engineering ethics tends to focus primarily on the moral decisions and responsibilities of designers, and therefore usually remains too external to the moral significance of technologies themselves. Yet, it is plausible to analyze artifacts in moral terms also. After all, much effort in the philosophy of technology has been invested in showing how technologies play a profound role in human actions and moral decisions. And if ethics is about the question how to act and which decisions to make, this implies that artifacts have moral relevance. This paper will explore this moral relevance, by investigating to what extent this active role of technological artifacts can be analyzed in terms of moral agency, and how it is related to the moral agency of the designers and users of technologies.

1. Do artifacts have moral agency?

The question of the moral significance of artifacts has been smoldering within the philosophy of technology for some time now. Back in 1986 Langdon Winner wondered whether artifacts could have a political charge, a question grounded in the analysis he made of a number of 'racist' viaducts in New York deliberately built so low that cars could pass beneath them but not buses. This meant that the dark-skinned population -

people unable to afford a car - was effectively prevented from accessing the beach (Winner 1986). Bruno Latour (1992) subsequently argued that artifacts are bearers of morality as they are constantly taking all kinds of moral decisions for people. Objects embody what he calls 'scripts': just like the script of a film or play they prescribe who does what and when. Thus, for example, he shows that the moral decision of how fast one drives is often delegated to a speed bump in the road with the script 'slow down before reaching me'. Anyone complaining about deteriorating moral standards in our society, according to Latour, should use their eyes as the objects around us are chock-a-block with morality.

This 'material expansion' of ethics raises many questions, though. Is the conclusion that things influence human actions reason enough to actually attribute morality to materiality? Can things be considered moral agents, and if so, to what extent? And how is the moral 'charge' of artifacts related to technology design? Is it morally right to explicitly shape to a morality of things, by consciously steering human behavior with the help of the material environment? In ethical theory, to qualify as a moral agent requires that the agent possesses intentionality and some degree of freedom. In order to be held morally accountable for an action, the agent needs to have had the intention to act in a specific way, and the freedom to actually realize this intention. Both requirements seem problematic with respect to artifacts - at least, at a first glance. Artifacts do not seem to be able to form intentions, and neither do they possess any form of autonomy. Yet, both requirements for moral agency deserve further analysis.

a. technological intentionality

Let us first take a closer look at the 'intentionality' aspect of moral agency. Even though at a first glance it might seem absurd to speak about artifacts in terms of intentions, some influential contemporary analyses of technology, like those of Don Ihde and Bruno Latour, do attribute some form of intentionality to artifacts. As I elaborated earlier, these analyses can be taken together in an approach of 'technological mediation' (Verbeek, 2005). In this approach, technologies are analyzed in terms of their active mediating roles in the relations between humans and reality. When a technology is used, it establishes a relation between its user and his or her environment. Technologies enable us to perform actions and have experiences that were scarcely possible before, thereby helping to shape *how* we act and experience things. Thus, the car has facilitated a greater physical distance between home and work, carrying the spheres of work and leisure, with their attendant social structures, further apart. And medical technologies enable new perceptions of the human body but in doing so also guide the ways we interpret it and make decisions about it.

Seen from this perspective, technology is not a neutral instrument or intermediary, but an active mediator that helps shape the relation between people and reality. This mediation has two directions: one pragmatic and the other hermeneutic. On the one hand technologies mediate the way people are present in their world

by helping to shape their actions and lives. On the other hand, technologies mediate the way reality can be present for people by helping to shape their perceptions and interpretations.

Latour's work offers many examples of the 'pragmatic' dimension of technological mediation. With Madeleine Akrich, he coined the term 'script' to indicate that artifacts can prescribe specific actions, just like the script of a film or play which prescribes who does what and when (Latour 1992; Akrich 1992). Latour shows, for example, that the decision of how fast one drives is often delegated to a speed bump in the road with the script 'slow down before reaching me'. Everyday life is loaded with examples of technologies that help to shape our actions. In Dutch supermarkets, shopping carts are equipped with a coin lock, to encourage users to put the cart back in place rather than leaving it at the parking lot. Recently, even carts were introduced with a wheel lock which blocks the wheels when the cart is moved outside a designated area, thus preventing it to be stolen.

Don Ihde's work is in the hermeneutic dimension of technological mediation. Ihde analyzes the structure of the relations between human beings and technological artifacts, and investigates how technologies help to shape, on the basis of these relations, human perceptions and interpretations of reality. A good example to illustrate the hermeneutic aspects of technological mediation is ultrasound. This imaging technique is not simply a functional means of making an unborn child visible in the womb. Ultrasound can help to shape the way the unborn child is 'read' and the choices his or her parents make. It can be used, for example, to measure the thickness of the neck fold of a foetus, which gives an indication of the risk that the child might suffer from Down's Syndrome. The sonogram thus lets the child be present in terms of 'ill' and 'healthy', and implicitly even 'wanted' or 'unwanted'. Having a fetal neck fold measurement done implicitly suggests that it is not desirable that a child suffering from Down's Syndrome should be born. In so doing, this mediation of perception helps to shape the experience of being pregnant, and determines how the unborn child is interpreted and what actions are to be considered (cf. Verbeek 2002).

In these examples, artifacts are *active*: they help to shape a situation, which would have been otherwise without the artifact. Artifacts do not have intentions here like human beings: they cannot *deliberately* do something. But they have intentions in the literal sense of the Latin word 'intendere', which does not only mean 'to intend' but also 'to direct', 'to direct one's course', 'to direct one's mind'. Artifacts direct. Their interventions in human practices thus help to shape new practices. Latour's 'amodern' approach is helpful in conceptualizing such 'thingly intentionalities'. In this approach, no *a priori* distinction is made between humans and what he calls 'nonhumans': he treats them symmetrically, since both can be 'agents.' In this symmetrical approach, he replaces the concept of 'intention' with 'program of action' - a concept which is

applicable to both humans and artifacts.¹

The intentional character of artifacts in the sense of 'directing' is also to be found in the emergent, unexpected character of many forms of technological mediation. Many mediations cannot be reduced to the intentions of designers. Some technologies, for instance, are used differently than their designer had envisaged. The first cars - which only made 15 km/h - were used primarily for sports, and for medical purposes (driving at a speed of 15 km/h was considered to create an environment of 'thin air', which was supposed to be healthy for people with lung diseases). Only after it was interpreted as a means for long distance transport could the car get to play its current role in the division between labor and leisure. Technologies need use contexts to be technologies; otherwise they would be only 'pieces of junk lying around', to quote Don Ihde (1990). If users interpret technologies in different ways than the designers intended, unforeseen mediating roles can come about.

But also when technologies are used as intended, unforeseen relations with users can come about, in which emergent forms of mediation develop. The very fact that the introduction of mobile phones has led to changes in youth culture - e.g., young people appear to make ever less appointments with each other, since everyone can be called anytime to go somewhere - was not intended by the designers of the mobile phone.

This is to make plausible that artifacts are able to 'do' something. They act, in the sense that they help to shape human actions and experiences. As such, they can be said to form intentionalities, understood in an expanded sense as ways of 'directing'. These technological intentionalities have moral relevance. After all, if ethics is about the question how to act, and artifacts are able to provide answers to this question by steering human actions or helping to form interpretations on the basis of which humans make decisions, then there is some 'material' form of morality in the artifacts.

It is important to note that this material form of intentionality cannot exist without human intentionalities supporting it. Just like morality is not exclusively a human affair, it cannot be an exclusively technological affair either. Morality is a hybrid affair, involving both human and nonhuman agents, or, better, 'composite agents' with agency distributed over their human and nonhuman elements. When mediating the relations between humans and reality, artifacts help to constitute both the objects in reality that are experienced or acted upon and the subject that is experiencing and acting. This implies that the subject which acts or makes decisions about actions, is never purely human, but a complex blend of humanity and technology. When making a decision about having an abortion or not on the basis of technologically mediated knowledge about the chances that the child will suffer from a serious disease, this decision is not 'purely' human, but neither is it

¹ Cf Latour 1994, 33-34: "The same is true of goals and functions: the former associated more with humans, the latter with nonhumans, but both can be described as programs of action — a neutral term useful when an attribution of human goals or nonhuman functions has not been made." The problem here is, though, that Latour describes the agency of nonhumans in terms of functions, whereas I think 'mediation' would be a better alternative.

entirely induced by technology. The very situation of having to make this decision and the very ways in which the decision is made, were co-shaped by technological artifacts. Without these technologies, either there would not be a situation or choice of the decision would be made on the basis of a different relation to the situation. At the same time, the technologies involved do not *determine* human decisions here. Moral decision-making is a joint effort of human beings and technological artifacts.

b. ethics beyond autonomy

But if this is true, we run into problems with the second requirement for moral agency we discerned at the beginning of this paper: freedom or autonomy. But this requirement, too, is less obvious than it might seem at first glance. For even though some degree of freedom is needed to be held morally accountable for an action, virtually every moral decision we make is mediated by technology. The decision whether or not to have an abortion, as mentioned above, is most often mediated by ultrasound scans, blood tests and an amniocentesis. The decision how fast to drive and therefore how much risk to run harming other people is always mediated by the lay-out of the road, the power of the engine of the car, the presence or absence of speed bumps and 'flashing posts', et cetera. Because of the profoundly mediating role of technology in human actions and decisions, as these two examples from the hermeneutic and pragmatic lines in the philosophy of mediation illustrate, autonomy cannot be taken as an obvious criterion for moral agency.

But, it can be countered, moral agency does not necessarily require *complete* autonomy: some degree of freedom can be enough to be held morally accountable for an action. And not all freedom is taken away by technological mediations, as the examples of abortion and driving speed show. Human behavior is not determined by technology here, but is rather co-shaped by it, with humans still being able to reflect on their behavior and making decisions about it. Yet, this counterargument steps over the fact that most mediations, like those provided by speed bumps and by the presence of ultrasound scanners as a common option in medical practice, occur in a prereflexive manner, and can in no way be escaped in moral decision-making. The moral dilemmas of whether or not having an abortion and of how fast to drive would not exist in the same way without the technologies involved in these practices. Technologies like these cannot be defined away from our daily lives. The concept of freedom presupposes a form of sovereignty with respect to technology that human beings simply do not possess.

This conclusion can be read in two distinct ways. The first is that mediation has nothing to do with morality whatsoever. If moral agency requires freedom and technological mediation limits or even annihilates human freedom, only non-technologically mediated situations leave room for morality. Not only are technological artifacts unable to make moral decisions, but also is human behavior that is induced by technology of a non-moral nature. A good example of this criticism are the often-heard negative reactions to explicit behavior-

steering technologies like speed limiters in cars. Usually, the resistance against such technologies is supported with two kinds of arguments. First, there is the charge of endangering human freedom and wishing to trade democracy for technocracy. Should all human actions be guided by technology, the criticism goes, the outcome would be a technocratic society in which moral problems are solved by machines instead of people. Second, there is the charge of immorality or, at best, amorality. Actions not the product of our own free will but induced by technology can not be described as 'moral'. And, which is worse, behavior-steering technologies might create a form of moral laziness that is devastating to the moral abilities of citizens.

Yet, this criticism is deeply problematic. After all, the above-named analyses of technological mediation show that people's actions are *always* mediated, so there is never any question of a subject acting autonomously. To phrase it in Latour's words: "Without technological detours, the properly human cannot exist. (...) Morality is no more human than technology, in the sense that it would originate from an already constituted human who would be master of itself as well as of the universe. Let us say that it traverses the world and, like technology, that it engenders in its wake forms of humanity, choices of subjectivity, modes of objectification, various types of attachment." (Latour 2002). Therefore, giving the inevitable technological mediations a desirable form rather than rejecting outright the idea of a 'moralized technology' in fact attests to a sense of responsibility. And this is precisely what opponents of speed limitation forget. Also without speed limiters, the actions of drivers are continually mediated: indeed, as cars can easily exceed speed limits and as our roads are so wide and the bends so gentle as to permit driving fast, we are constantly being invited to further explore the space between the accelerator and the floor.

Therefore, the conclusion that mediation and morality are at odds with each other is not satisfying. It is virtually impossible to think of any morally relevant situation in which technology does not play a role. And it would be throwing out the child with the bathwater to conclude that situations in which technology plays a role leave no room for moral judgment. Therefore, an alternative reading is needed of the conclusion that technological mediation is at odds with ethics. We need an alternative to the all-too-narrow approaches of freedom and of ethics. Freedom simply does not exist in an absolute sense. Human actions always take place in a stubborn reality, and therefore the ambition to reach a state of absolute freedom would require that we ignore reality, giving up the possibility to act at all. Freedom should not be understood as a lack of force and constraints, but as the existential space human beings have to realize their existence. Humans have a relation to their own existence and to the restraints it meets in the material culture in which it happens. This specific situatedness of human existence creates specific forms of freedom, rather than impeding them. Freedom can only arise where possibilities are opened up for human beings to have a relation to the environment in which they live and to which they are bound.

2. Toward an amodern ethics of technology

Formulating the principles of an ethics which takes the moral agency of artifacts into account is a major task, which cannot be dealt with adequately in the context of a short paper like this. Some basic lines of research may be sketched, though, in a somewhat programmatic way.

The problem to adequately conceptualize the moral role of technology in our culture can be analyzed as a product of the Enlightenment. Enlightenment thinking has produced a modernist approach of reality, in which a strict separation of subjects and objects is made. Reality consists of two types of entities, one subjects, equipped with consciousness and therefore with the freedom to make decisions, and the other objects, understood als 'res extensa', things merely occupying space. As Bruno Latour has convincingly shown in *We Have Never Been Modern*, this purification of subjects and objects, or humans and nonhumans, blocks our view of the complex and intricate connections between human and nonhuman entities.

The Enlightenment, in a somewhat caricaturized version for the sake of clarity, has thus left us with realism on the one hand and humanism on the other: things are to be studied in an 'objective' way, subjects need to be treated in a 'humane' way, and both isms erected a high fence around themselves in order to protect their purity. Objects are dead matter, whereas only subjects are active and conscious. Specifically applied to ethics: things do not possess freedom, and therefore they cannot be moral agents; whereas freedom is precisely what characterizes human beings and what makes moral agency possible, and therefore this freedom may not be distorted by influences of artifacts. Understood this way, modernist approaches of reality radicalize the differences between humans and nonhumans, and fail to see how they have always been interconnected, helping to shape each other.

In order to do justice to the moral relevance of artifacts, therefore, an 'amodern' approach to ethics is needed. More specifically, what is needed is a conception of ethics in which an understanding of human freedom is developed which is reconcilable with the inevitably mediated character of human actions and experiences. A fruitful line for developing this ethical approach and this reconceptualization of freedom is to be found in the late work of Michel Foucault. In the context of this paper, I can only make some tentative and programmatic remarks about ways to take the late Foucault into the ethics of technology.

After having debunked the autonomous subject as being shaped by a complex set of material and non-material power relations (e.g. in *Surveiller et Punir*), Foucault's late work analyzes how in classical Greek thinking ethics was approached in terms of constituting oneself as a moral subject. He shows how every conception of ethics presupposes some kind of self-experience. Modern ethical subjects – taking ethics in the Kantian sense - are the products of a submission or (literally) 'subject-ion' to a universal law. Classical Greek ethics, to the contrary, consisted in the deliberate constitution of oneself as a moral subject. Ethics

was a form of 'care for oneself'. Against *being* constituted as a specific subject, it consisted in *constituting oneself* as a subject. Rather than about following moral codes it was about actively shaping and styling one's life. Ethics was self-work, and involved 'technologies of the self'.

In this self-constitution, there was explicit space for relating to that which influences or determines the person. Human beings can constitute themselves as moral subjects only within the specific context in which they live and which helps them to be who they are. Foucault's main interest here, since he developed these thoughts in books about the history of sexuality, was with the *passions* that exert influence on humans and to which one needs to find a relation. In order to find out if and how these early Greek conceptions of ethics could be translated to the present, it is interesting to investigate to what extent the human self-relation can also concern the ways in which *technological mediations* help to shape the self and the context in which one lives. Such a conception of ethics would recognize 'influences' on the subject as important aspects of the moral subject, rather than defining them away from the subject: being a moral subject is precisely about finding a relation to what helps to shape oneself.

Such an 'amodern' approach to ethics takes the inevitable mediations that make us who we are as its core business, not as a threat to 'genuine' moral agency and subjectivity. In this way, neither human freedom, nor the fundamentally mediated character of our actions and perceptions has to be denied. But what could such an approach, of which I have only been able to sketch the outlines and which needs much more elaboration, imply concretely for ethical discussions about technology design?

In view of the inevitable mediating role of technology in human actions and moral decisions, a code-oriented ethics is not adequate for dealing with moral questions connected to technology. Ethics should not try to find itself a place outside technology, judging from a distance whether a technology is morally acceptable or not. Placing oneself outside technology comes down to placing oneself outside society, and this cannot be a fruitful basis for ethics. The ethics of technology could benefit from a life-ethical approach, which reflects on the ways in which technologies help to shape our lives, and which is actively trying to find ways of dealing with technology and its mediations, in order to constitute a way of living-with-technology. Instead of aiming at rejecting or accepting technologies, it should aim at accompanying technological developments (Hotois), experimenting with mediations and finding ways to discuss in public how one could deal with these mediations, and what kind of living-with-technology is preferable.

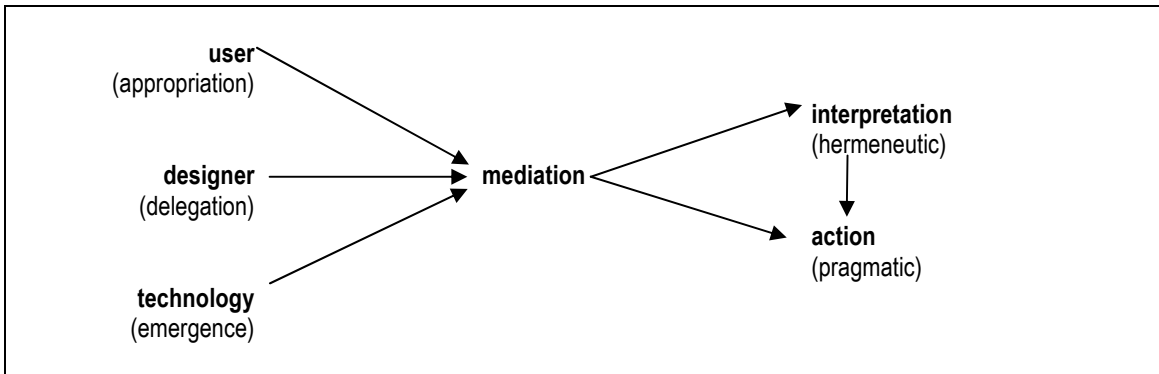
This implies that the most relevant form of ethics of technology is the ethics of technology *design*, since this is where technology is getting shape and where at least some influence on technological mediation is possible. The questions that arise then are: how can designers anticipate technological mediations or intentionalities; and how can this anticipation be integrated in an ethics of technology design - or an understanding of the moral responsibility of the designer, if you want.

By designing technologies that will inevitably play a mediating role in the experiences and actions of those who use them, designers are in fact continually engaged in what could be called 'materializing morality'. Designing is 'doing ethics by other means'. Usually this morality built into technology is shaped implicitly and unconsciously. It is therefore important to ask how designers can more explicitly anticipate the future mediating role played by technologies. This would enable them to seek out undesirable forms of mediation in good time on the one hand and build purposefully determined forms of mediation into a product on the other.

But in practice, anticipating desirable or undesirable forms of mediation is not as simple as it may first seem. Indeed, to build particular forms of morality into a product it is necessary to predict what mediating role technology-in-design will play in its use context in the future. And this is no easy matter, as there is no univocal relationship between the activities of designers and the eventual mediating role of the products they design. The mediating role played by a technology is not an intrinsic quality of that technology but is brought about in a complex interaction between the designers, users, and the technology itself.

As became clear in the first section of this paper, technologies can be used in unforeseen ways, and therefore are able to play an unforeseen mediating role. For example, the introduction of the energy-saving light bulb has actually resulted in a greater energy consumption, as such bulbs are often used in places previously left unlit (such as in the garden or on the façade), thereby canceling out their economizing effect (Steg 1999; Weegink 1996). Moreover, unintentional and unexpected forms of mediation can arise when technologies do get used in the way their designers intended. A good example is the revolving door which keeps out not only cold air but also wheelchair users. In short, designers play a seminal role in realizing particular forms of mediation, but not the only role. Users with their interpretations and forms of appropriation also have a part to play; and so do technologies, which give rise to unintended and unanticipated forms of mediation. The figure below illustrates these complicated relations between technologies, designers, and users in the coming about of actions.

This complexity of the relations between users, designers, and artifacts makes it complicated to analyze the ways in which designers could take moral responsibility for their designs. But this fundamental unpredictability of the mediating role of technology does not imply that designers are by definition unequipped to deal with it. The best way of coping with the unpredictability and complexity of technological mediation is to seek links with the use context drawn from design practice. Design specifications should derive not only from the product's intended function but also from an informed prediction of the product's mediating role and a moral assessment of that role.



A key tool to bring about this coupling of design context and use context is the designer's moral imagination - however trivial it may sound. By trying to imagine the ways technology-in-design could be used and by shaping user operations and interpretations from that perspective, a designer can include the product's mediating role in his moral assessment back during the design phase. This moral assessment can, of course, be done in a modernist way, applying a moral code which humans are to follow. This can be very useful, but it would be interesting to explore to what extent it could also be done in a nonmodern way, attempting to assess the quality of how the technology helps shape the subject and to formulate ways of living with these mediating technologies.

In this context, it is good to take into account that deliberately 'inscribing' morality into artifacts (Latour), by designing them in such a way that they influence human behavior and human decisions in specific ways, does not need to take the form of designing 'dominating' or 'compelling' artifacts. Technologies can also 'seduce' users to act in specific ways - like the designs of Eternally Yours, which seeks to develop products that maintain their attractiveness over the years so that people develop a durable relation with them and do not discard them prematurely - or 'convince' them to act in specific ways - like the econometer in cars that tells you when your driving behavior is energy-efficient.

By deliberately experimenting with different ways in which technologies help to shape human subjectivity, designers can create a basis for a public moral debate about the quality of the life that results from living with such technologies. Technology design then offers an interesting new dimension to Foucault's 'self-work' or 'technologies of the self', in the sense that it partly brings the influences to which the subject has to relate within the reach of the subject itself. Unlike the passions with which the subject has to deal in order to give shape to his or her sexuality, the technologies that co-determine our lives are the products of human design, which can be altered after having gained experience in dealing with them and after careful consideration and

debate. Technology design can then be approached not only as 'materializing morality' but also as the making of stylistic choices: choices regarding the style of living of the subjects dealing with the technologies.

This immediately makes clear that the ethics of technology design cannot be an activity of designers only. Precisely because the decisions of designers have public consequences, these decisions and their consequences should be publicly discussed. The products of the designing work then become 'public things', in the sense of the word that Latour recently elaborated: the *res publica* (Latour 2005). 'Res', the Latin word for 'thing', also meant 'gathering place', or 'that which assembles'. 'Things' can thus be interpreted as entities that gather people and other things around them, uniting them and making them differ. Seen in this way, technological artifacts do not only help to shape our lives and our subjectivities, but are also foci around which humans gather in order to discuss and assess their concerns about the ways in which these things contribute to their existence. And this is precisely where the morality of design is to be found.

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The morality of design

*some notes on the moral agency
of artifacts, users and designers*

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The moral agency of artifacts

Do artifacts have moral agency?

- Ethics is about the question '**how to act?**'
- Technologies **mediate** human actions and interpretations
- Technologies give '**material answers**' to the ethical question 'how to act?'
- Design is **ethics by other means**: designers materialize morality
- **Can artifacts possess moral agency**, and if so: how does this relate to the agency of designers and users?

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Ultrasound imaging (1)



Ultrasound imaging (2)

- The Netherlands: routine scan at 12 weeks of pregnancy to determine the age of the fetus
- Ultrasound is popular:
'baby's first picture' → 'fun scans'
- But the routine scans also reveal (a.o.):
 - *nuchal translucency* (→ *Down's syndrome*)
 - *state of skeleton* (→ *Spina Bifida*)
- Scans evoke new prenatal testing practice:
 - *More amniocenteses to intercept children with a serious disease*
 - *More 'spontaneous abortions': only from the age of 36 there is a 'break-even point'*

Ultrasound imaging (3)

The mediating role of ultrasound scanning:

- **It isolates the fetus from the female body**
 - New ontological status of the fetus as a *separate* living being
 - Space to make decisions about the fetus apart from mother (Zechmeister, 2001)
- **It places the fetus in a context of medical norms**
 - Translates pregnancy into medical process
 - Translates fetus into possible patient
 - Translates congenital defects into preventable suffering
- **It changes the abortion practice:**
 - More amniocenteses → more abortions and miscarriages
 - *Encourages* abortion of fetuses with serious diseases
 - *Discourages* abortion because of visualization of 'fetal personhood' ('Window to the Womb'; Boucher 2004)

Ultrasound imaging (4)

- **Where is the agency in decisions about abortion?**
 - Humans may seem to make the ultimate decision ...
 - ... but they do not do so autonomously, since ultrasound co-shapes their interpretation of the fetus, be it
 - as a pre-human entity which can be prevented from being born with a serious disease; or
 - as a future person with a right to live
 - So this moral decision is not a human affair, but an affair of a human-technology association
- **Ultrasound scanners have moral relevance:** *they co-shape moral decisions by 'acting' in ways unforeseen and uncontrollable by their designers*
- **But: does this imply that ultrasound scanners have moral agency?**

Obvious objections

- **In order to qualify as a moral agent, an entity needs to possess:**
 - A. Intentionality
(*the intention to act in a specific way*)
 - B. Freedom
(*the freedom to actually realize this intention*)
- **Moral agency of artifacts seems to be at odds with both requirements:**
 - artifacts do not possess intentionality
 - behavior induced by technologies cannot be qualified as moral actions

A. Technological intentionalities (1)

- **Technological Mediation (Verbeek 2005):**
 - Technologies mediate human-world relations
 - Pragmatic: mediation of action (Latour)
 - Hermeneutic: mediation of perception (Ihde)
- **Intendere = 'to direct'**
Artifacts *direct*: they help to shape human actions and decisions
 - Latour: thingly intentions as '*programs of action*'
 - Ihde: thingly intentions as '*technological intentionalities*'

A. Technological intentionalities (2)

- **To be sure: material forms of intentionality require human intentionalities**
 - agency is distributed over 'humans and nonhumans'
 - subject is always co-shaped by technological intentions
 - object is always co-shaped by human intentions
- **Action is a matter of 'human-technology associations':**
 - no pure determination by technology;
 - but no total autonomy of human beings either
- **Moral agency is not a solely human property, but a property of 'human-technology associations'**

B. Ethics beyond autonomy

- **Freedom is required to be held accountable for actions**
- **But: virtually every human action is technologically mediated:**
 - technological mediation cannot be escaped in moral decision-making;
 - therefore, autonomy cannot mean "sovereignty from technology"
- **Redefinition of autonomy needed:**
the existential space humans have to realize their existence

Amodern ethics?

- **How to do justice to the moral agency of technology in ethical theory?**
 - amodern approach (Latour):
→ *beyond the modernist separation of subjects and objects*

- **Possible basis:**
Foucault's analysis of classical Greek ethics
 - no subjection (subject-ion) to a universal law but moral self-constitution
 - ethics as self-work, relating to what influences or determines the person (the passions → technology)
 - → mutual shaping of subjectivity and objectivity

- **Ethics of technology as:**
 - recognizing morally relevant technological mediations
 - anticipating and helping to shape these mediations

Toward an amodern ethics of design

Design ethics:

- bringing together the intentionalities of artifacts and of human beings
 - life-ethical approach: no separation of subjects and objects
1. **Anticipating mediations**
 - complex: mediation results from designer, user, and artifact
 - imagination and experiment as nexus between design and use

 2. **Assessing mediations**
 - designing is doing ethics, and therefore needs to be a public affair
 - reconceptualizing technologies as 'public things' (Latour: *res publica*)
 - 'thing' = a place to gather and discuss public affairs
 - ethics: gathering around things to discuss the quality of the life they evoke

 3. **Inscribing mediations**
 - ethics as thoughtful and careful experimentation with mediations (rather than 'whistleblowing' and other externalist approaches)