# Dematerialisation through Body Orientation

## Wolfgang Jonas

# Dematerialisation through Body Orientation

## Wolfgang Jonas

Wolfgang Jonas is Professor of Design Theory at University of the Arts Bremen, Germany. He is a member of the Editorial Advisory Board of Design Philosophy Papers and the author (with Jan Meyer-Veden) of *Mind the gap! On knowing and not-knowing in design* (Bremen: Hauschild-Verlag, 2004). He has described himself as "not a philosopher, but an engineer with a special interest in system theory in the whole range from cybernetics via self-organisation to social systems." His interests are in meta-theories of design, futures studies and scenario-techniques.

### Preface – a Kind of Framework

I have been considering the idea of design interventions coming closer and closer to the human body for about 10 years. So what can be read is a snapshot of an evolving artefact, one timeframe of one aspect of my reflection on designing designing, as John Chris Jones has put it.[1] A very early version of this text was published at the design-theoretical colloquium 'Virtualität contra Realität?' at the College of Art and Design, Halle, Germany, October 1995, where it caused downright disapproval. The text 'slept' for a long time and was re-awakened for the 'design + emotion' conference in Ankara, Turkey, July 2004, where it still caused some irritation. I completely re-designed the concluding part for a lecture in Montréal in February 2005, where it caused an intense and finally fruitful debate on the role of design. Nevertheless, I realised the need to frame the text more clearly, to explicitly declare its status as a provocation to designers.

I deliberately adopt an *a-moral position*, because moral (pre-)judgements, i.e. fixed, unquestioned beliefs in how things should be, are the main obstacles to complexity

thinking; they tend to destroy complexity before it can even be perceived. I avoid the well-known cures, notoriously proclaimed in the community. For example, Manzini claims radicalism in arguing that "... the question of rethinking the relation between the human race and the environment must be asked in a radical manner ..." but seems caught in homey and undisputed scenarios like 'green consumerism'.[2] Apart from extremely unclear systems concepts (why the relation/distinction mankind – environment?) an extremely normative character of appeal is prevailing: *"we must, we have to, we should not…"* Inspirations for my kind of thinking come from outside and from the fringes of the discipline. Fresh air for more gaily thinking is still urgently required.

According to the risk society theory of Giddens or Beck, we no longer live our lives in compliance with Nature or Tradition.[3] Zizek argues, that:

> … there is no symbolic order or code of accepted fictions (what Lacan calls the 'Big Other') to guide us in our social behaviour. … Things which once seemed self-evident – how to feed and educate a child, how to proceed in sexual seduction, how and what to eat, how to relax and amuse oneself – have now been 'colonised' by reflexivity, and are experienced as something to be learned and decided on.[4]

If the positive norms do not help any more, the suspicion of some negative, dark, secret powers involved in a plot against freedom, democracy and Nature may be an alternative. Says Zizek:

> Believing there is a code to be cracked is of course much the same as believing in the existence of some Big Other: in every case what is wanted is an agent who will give structure to our chaotic lives.[5]

Manzini's appeals may appear as the belief in some 'Big Other'. Vilem Flusser comes closer to the topic of my experiment. He outlines the cultural development of mankind as an increasing estrangement from the context of things concerning man. The mathematical-technical thinking of modernity is crucial for this development – the transformation of the code from letters into numbers. Instead of God's literal laws, we have numerical laws of Nature today.[6] Although Flusser's diagnoses are still in accordance with the analyses of, for example, Heidegger, they do not lead him to cultural pessimism or demonisation of technology. He rather emphasises the new possibilities arising from the scientific and technological transformations in the culture of modernity. There is a moment of practical enlightenment in the dissolution of the meaningful structures of the lifeworld by means of mathematical abstraction: namely the freedom to conceive alternative structures

of meaning and to re-design the world and the human life according to our own needs and our own rules.

Finally I refer to Peter Sloterdijk. In his controversial essay 'Regeln für den Menschenpark: Ein Antwortschreiben zum Brief über den Humanismus' he explicitly refers to Heidegger's text 'Über den Humanismus' (1949).[7] In 1946, Heidegger had characterised Christianity, Marxism and Existentialism as three varieties of humanism that all avoid the final radicalism of the question concerning the nature of man. He gives his answer in his existential ontology: not man is essential but existence itself; man is the pastor/shepherd of existence.

Even if Sloterdijk does not follow Heidegger in his conclusions, he acknowledges his contribution of articulating the epochal question: what still tames man, when humanism as the school of taming men is failing? What tames man, after previous efforts of self-taming have – for the main part – resulted in a seizure of power over everything existing? At least since the end of WW2 we find ourselves in a trans-humanistic or post-humanistic space of thinking. Classical humanism does not provide sufficient means any more in the battle for man, which is taking place as a fierce struggle between the bestialising and the taming tendencies. Therefore, in the face of his biological openness and moral ambivalence, the question of man's destiny has to be raised again.

Sloterdijk sharpens this argument by calling men the creatures, which have failed in their being and remaining animals. Or, by calling them the animals of which the one group is literate and the other is not (the humanistic distinction). Or, by calling men the animals of which the one group is breeding the other.[8] Here he is playing with the German etymological equivalence of züchtigen/ zähmen (= beating/taming) and züchten (= breeding). Previous monopolies of taming (breeding) in this 'project of domestication', as Sloterdijk calls it, lay in the hands of priests and scholars.

The explicit shift from taming to breeding men breaks up the humanist horizon. Nietzsche introduced the notion of men becoming domestic animals and he senses a space where unavoidable struggles about directions and policies of breeding will begin. Sloterdijk interprets Zarathustra's (Nietzsche's) critique of humanism as rejection of *"the false harmlessness, with which modern good man surrounds himself"*. And his widely (often deliberately) misunderstood conclusion is: we have to keep an eye on the emerging field of anthropo-technologies, if we do not want to keep on devoting ourselves to playing down things (Verharmlosung). The trace of this discourse is obvious, at least since Plato. Today the selective potentials are at hand according to Sloterdijk:

But as soon as powers of knowledge are positively developed in a field, men will cut a sorry figure if – like in times of former

powerlessness – they want to let a higher power, be it God or be it chance or be it others, act in their place. As mere refusals or resignations tend to run aground on their sterility, what matters for the future seems to be to actively take up the play and to formulate a codex of anthropo-technologies.[9]

And here we are re-approaching designing. What are possible anthropo-design technologies/approaches and how to assess them in various social, political, economic, cultural, ethical contexts? In this sense, the text deals with new roles for design. I have suggested recently that design should be *more arrogant + more modest* in its claims. I will come back to this at the end.

## To the Body

The nowadays stylish term 'emotional design' may provoke the question: is this about the 'emotions' of artefacts (concepts as 'affective computing' suggest that this is possible), or is this about the emotions and feelings of users/people? We can learn that emotions are evoked through biological processes, which are caused by sensual stimuli.[10] Emotions are outward-oriented, visible, and thus public. Related feelings are inward-oriented, private, more differentiated, either conscious or unconscious. That means, the question can be resolved (for the moment) by stating that emotional design should be about human emotions. This leads to the hypothesis: why not approach the issue from the side of the human body? And why not use it for further-reaching purposes such as de-materialisation?

It sounds suspiciously paradoxical to speak of de-materialisation through body orientation, since corporeality and materiality are often used almost synonymously. Let me clarify then: body here refers to that closed sack, which consists of the surface of the skin with its folds and furrows, within which the inner organs work to keep a sensitive balance of production and disposal of humours and fleshes. That very vessel, isolated and, yet, time and again struggling to come into contact with other vessels of its kind or the world surrounding it, or even to melt into one.

Bodies and their skins – just the same as the earth and dwellings upon it – have always been particularly cultivated surfaces. One can express the desire for non-seclusion, for belonging to a social body by using markings, tattoos, war paints etc. Until very recently, human activities were oriented almost exclusively towards the exterior, away from the skin.

## Man and the World: Fear of Death

In the course of evolution, one can observe a phenomenon, where one or several organs are subject to monstrous adaptive hyper-development, eventually leading to the extinction of the species concerned. There is the example of a particular species of deer,

whose over-developed antlers made it impossible for them to survive in the thicket of the forests. This is referred to as *hypertelia*. It seems plausible to see the overly developed human brain as a hypertelic development. And it thus becomes the main reason for the problems, which we are faced with, or rather, which we face ourselves with. Man has failed in his being and remaining an animal. It is the emergence of the capacity of imagination and a sense of time (both into the past and the future), which makes the otherwise typical mammal hominoid experience unbearable.

Wulf states:

It enables the fantastic to break into the world of man, causing a 'doubling' of the world into an inner and an outer world; it does away with the unambiguity, which prevails for the animal; it makes man unprotected and open to the world; it exposes man to death, ecstasy and madness.[11]

Tibon-Cornillot states:

By gaining the possibility to imagine anticipatively their own death as well as that of fellow human beings, by gaining the possibility of deliberately recalling their past, humans have got themselves into a structure, which at all times differentiates between what they are striving for and what they experience, and which is the source of an incredible fear of death.[12]

In this situation, one of man's various strategies is the compulsion to create a sense of 'order' in his universe. In view of the perennial *fear of death*, this is done by integrating death into mankind's order of things. The constructions, which civilisation has come up with to avert or at least domesticate death are all familiar: first, it was magic, myth and religion, later also technology, science and capitalism.[13] Intellectual and material objects were created in order to project onto them and thus render manageable individual and collective *desires* and *fears*. Ritualistic cannibalism is an early example of a complex construction to overcome fear of death. It was a way of protecting oneself from the dead by absorbing their powers, and moreover giving the dead an 'honourable' grave, enabling them to keep on living. Prayers, sacrifices, rituals and norms constitute the 'sacral machine'. Such magico-mythical explanations for the mysteries of life and the world, rooted in conscience and society, attain climactic proportions in the 'Sacral Universal Machine' the single, charitable and punitive Christian God.[14]

What then follows are the *real* machines, the customisation of the world, the 'age of objectification'. The 'discovery of labour', through Benedictine monks in the 6th century, as something, which perfects man physically and mentally, establishes a new, very successful form of *projection*. The models of our inner conflicts,

hitherto represented through religious systems, are now developed with the help of technology and science. The 'profane machine' – as opposed to the 'sacral machine' – carries out work, which is useful in the sense that it satisfies needs, which we call rational. It is possible to construct the profane machine exactly according to the purpose of the intended projection. It can effectively satisfy desires and reduce or create fears.

The 'rational' man of modernity is able to develop and create mighty external systems of order: factory discipline, the state machine, the collective body of the nation. The human body has also been allocated to the object world during this development. It is dismantled in order to expose its machine nature. The profane machine man turns into a mill, a clockwork, a steam engine, a computer, a nano-machine, …

This renders possible a feedback effect of *projection* and re-projection, which speeds up the process – as, for example, when the brain is described as a computer and the computer as an electronic brain. So the body does not even manage to remain the exclusive host of the mind. The mind has now become the immaterial software as opposed to the body constituting the hardware, which can be imagined in any other form. This reminds us of the projects carried out by a number of representatives of the AI-community.[15]

The perfect mastery of matter/energy/space/time/information is closely connected to the dualism inside-outside, subject-object, mind-body, and virtual-real. Reality is only that of which the cause lies on the outside. The outside can be manipulated; fears and desires can be controlled via the outside.

So far, the story is familiar. And now, we're at a loss, confronted with the problems which we have created ourselves in the mass production of machines of desire and machines of fear: bodies are back with a vengeance, laying claim to their intimate connection with the mind. The autonomous subject and the objective object have become fictive, and even the laboriously established distinction between *real* and *virtual* no longer works. Luhmann states:

> The term 'virtual reality' misleads into the error of thinking that, in spite of this, there is a real reality, which can be grasped using man's natural equipment, although for a long time already, the issue has been to expose this natural equipment as just being one case among a whole range of possible cases.[16]

## The Mind is Willing … for Example De-Materialisation

Immaterialisation as propounded by post-modernists such as Lyotard[17] and demanded by ecologists, does not exist in the sense that it relieves us of the ballast of things. It may well be true that

we are living in the age of information, but the information products have not replaced the material ones, they are there in addition to the latter. They shove themselves – or rather, we shove them – between us and the world. Moreover, they need an immense, mostly invisible, material infrastructure.

The old industries have become something only found in museums, or more precisely: they emigrate. As the statistics show, the material intensity of our way of life is nevertheless on the increase.[18] We are more likely to see the masses of waste that we produce than the masses of raw materials that we consume. The material is in motion. Only if we look very closely are the great movements of material still visible to us.

Breuer notes:

> When people talk of the apocalypse, they rarely do so without referring to the salvation, to the new positive state, which is to be attained using all sorts of patent remedies: through less consumption and more spirituality, less growth and more communication with brother earthworm: and we know that it is only one step from the lofty to the ridiculous.[19]

The instrumentalisation of the notion of an apocalypse is nowadays more likely to provoke a negative reaction. Attempts have been backward-oriented, or moral, or totalitarian or, merely sensible.

For lack of a convincing alternative, on a trial basis, let us assume for a moment that the strategy of material reduction is the right one for sustainability. The deliberations will be mostly familiar. Schmidt-Bleek, for example, demands that world-wide material intensity should be reduced by 50% over the next 50 years, in order to achieve something resembling a sustainable global economy.[20] For a limited period of time, Third World populations will be granted an increase, while the West will have to cut back to one tenth of the current level. Von Weizsäcker turns this into the harmless sounding 'factor 4' (doubling the amount of wealth – halving the use of natural resources).[21] There is also a 'Club 1/5' and a 'Club 1/20', and these vary in how radical they are and what their exact area of interest is. The numbers aren't important though. The whole thing constitutes primarily the demand for prolonging the durability of products, for an orientation towards function rather than the object, recycling and re-use, accompanied by calls for regulation and, once again, the inevitable appeal for a re-think.

In actual fact we can only start from the situation as it is, and from the dynamics of development, and the way it presents itself: world-wide competition, industrial production with increasing productivity, the dominance of high-tech, the limited decisive powers of politics (the future is negotiated), and for the individual, increasing personal striving for a meaning/pleasure/survival. The design of interventions has to take this complexity into account as

a restriction and starting point; otherwise, we risk drifting towards lofty castles in the air.

This may sound very pragmatic, almost resigned, but only if we want to run after the backward-oriented solutions. There surely is an abundance of future-oriented, pleasurable alternatives, to be developed and publicised *through design, among other means*.

I now want to state more precisely the idea of de-materialisation through body-orientation.

### The Next Step of World Appropriation: Re-Discovering the Body as Our Most Important Sensory Instrument

The aim is to make the boundaries between inside-outside/body-mind/virtual-real more permeable to a new level of understanding. In retrospect, the strict separation of the self and the world seems like a necessary mental operation, in order to get into the position of independent observer of the outside world. In order to come to terms with the undeniable materiality, human fallibility and the transitoriness of the human body, it was necessary to separate the body from the mind. The inside of the mind had thus been separated from the inside of the body, but was now bereft of a place. In classical philosophy, this figure might take the shape of the epistemological subject. As Elias states:

> In the development of human society man increasingly sees himself as a single being, separated from nature and other humans, the more his reflection and conscience, due to his social training, will come – in a controlling and taming manner – between his own more spontaneous impulses to act and those other humans and natural objects around him. That is why it is far from easy to reconcile the insight that the feeling of a separating wall between one's own 'inside' and the world 'outside' is authentic, with the insight that it does not exist. Another phase of self-distanciation is indeed needed to attain this insight. It is only with the help of self-distanciation that we can see, what actually appears to exist as a separating distance between the self and 'others', between 'individual' and 'society', between 'subject' and 'object', for what it really is: the materialisation of one's own, socially implanted acts of distanciation.[22]

The emergence of *constructivism* seems to be an example of a process, which Elias calls *'another phase of self-distanciation'*. I shall here only very briefly touch upon the scientific basis. The *principle of undifferentiated coding* states that when a nerve cell detects excitement/stimulation it is *not* coded with the physical nature of the cause of excitement, but only the intensity of the cause of excitement, i.e. the code says 'how much', but not 'what'.

The neurons, being sensory cells, are specialised to respond to a single universal 'irritant'. According to Von Foerster:

> There is neither light nor colour 'out there', only electromagnetic waves; neither sound nor music, only periodic variations in air pressure, there is no such thing as warm or cold 'out there', only molecules moving along with more or less average kinetic energy, etc... .[23]

Roth, a German neuro-scientist states:

> All this leads to the bizarre conclusion that the brain, instead of being open to the world, is a cognitively self-contained system, which reads and evaluates neuron signals according to criteria which it has developed by itself, and about the true source and meaning of which it has no reliable knowledge.[24]

The nervous system is organised – or organises itself – in such a manner that it works out a stable reality through constant recursive combination of sensor and motor activity. Says Luhmann: *'consciousness interprets bodily processes as the world.*[25]

This state of being informationally closed-off is a condition for the development of autonomy and something resembling consciousness/self-consciousness. Yet it is also a prerequisite for social interaction and it renders possible cognition. An informationally open system would merely be a system of reflexes, rigidly coupled to its environment, and in that sense subject to external control, i.e. heteronymous.

In the course of his development, man has drawn ever wider technological and scientific circles of action (motor) and perception (sensory) around himself. He has even been searching for a divine vantage point outside of all circles. She can now accept the recognition that, in the end, she is limited to the innermost, closed-off circle of her sensory and motor apparatus, and that she only has that to construct her reference to the world: i.e. information, communication, technology, science. And she is surprised at how successful she has been with this so far.

So that means: we don't *have* a body, we *are* our bodies. To claim the contrary is a painstakingly set-up cultural construction, which inevitably falters once we get sick and infirm.[26] We are dealing with a re-approach of man's first and second nature, of inside and outside world, of body and mind. We experience the intellectual collapse or blurring of the boundaries separating animal, man and machine. Cyborgs are on their way. States Haraway:

> From a different perspective, the cyborg world could represent lived social and bodily/physical realities, where no one would have to fear their ties and proximity to animals

and machines, and where no one has to be scared of permanent partial identities and contradictory positions any longer.[27]

All this works towards rehabilitating *our inner realities*, to accept our feelings and dreams as real. Our apparently conscious and rational actions follow the rhythms of our 'fear-desire-machine'. As long as we need violent fantasies to control these unconscious processes and desire machines, which destroy our natural basis of life, we still belong to the age of early man. The only 'progress' which really counts, is not technological or ideological, but progress in the complexity of our perception and our ability to bear this complexity which exists inside and outside of us.

### 'Virtuality Contra Reality?'

There *is* no denying the body's *reality.* But just in order to become *aware* of it, we need the *virtuality* of the operations of consciousness, the internal meaning constructions, which in turn are based on the body's reality.

This dualism was a useful epistemological trick, which is today recognised as being such. It played an immense role in man's appropriation of the world. But it is precisely the degree to which man has appropriated the world today, which makes the antagonism disappear, rendering it obsolete. In the future, we shall have to treat these states as being complementary, or as two poles of a spectrum of reference to the world which do not make any sense on their own.

### Body Orientation: 'Closer to the Body!' / 'Underneath the Skin!'

What does that mean for design? Virilio states that:

> If we are looking for the site of high technology today, rather than searching the endless expanses of an infinitely huge particular planet or that of space, we should much rather focus on the infinitely tiny of our innards and cells which constitute the living matter of our organs....

> The predominance of the relative speed of mechanical transport being over on the one hand, and the sudden evolving primacy of the absolute speed of electromagnetic transmissions on the other hand, along with the extension and duration of an 'own world' actually liquidate the ontological privilege of the INDIVIDUAL body, of an 'own body', which in turn has to put up with the onslaught of technologies, molecular invasions and biotechnologies forcing their way in, all of which would be suitable to populate its entrails.[28]

He goes on to say that:

> In the post-industrial age, the META-DESIGN of customs and social habits will supersede the DESIGN of forms of objects of the industrial age. ... Having been given nourishing food, agricultural produce, preparations are now underway to cram us with all kinds of stimulants, and to let us digest them. We are here not only talking about modern chemical stimulants like alcohol, coffee, tobacco, drugs or anabolics, but also about technical stimulants, biotechnological produce, intelligent pills, which can apparently help to maximise our mental abilities.[29]

That all sounds very pessimistic: 'big brother' is cramming us with pills. It could be expressed more neutrally: *We are about to re-conquer/repossess our bodies on the level of high technology.* We can expect to hear outcries of indignation, such as the counter-argument: this is male chauvinism, religious belief in technology, envy of child-bearing ability, etc. I do not want to elaborate on this; I think all this is still about the legitimate human (male *and* female) central motive of *fear of death*. Tibon-Cornillot argues:

> The attempt to break down the separation between the artificial and the living amounts to the same as the attempt to overcome the differences of life and death of the body. This boils down to the core of what is happening at the moment in industrialised societies, which are subject to the current remodelling, and the price to be paid for this is to alter the human body.[30]

## Perspective: Body-Design Instead of World-Design

We equip our world with things and appliances, experiences and activities with which we hope to provoke the desired emotional effects. And yet, the complex sensory apparatus of our nervous system only uses external perturbations to generate (meaningful) information or not. Although social mechanisms help towards achieving the desired effect (advertising, peer pressure, fashion, Zeitgeist, etc) the approach is awfully rough. The aim is often to produce most elementary/archaic bodily processes or psychological states – an example being the phenomenon of bungee jumping. The list of elementary emotions is rather small and simple: anger, fear, sadness, disgust, surprise, curiosity, acceptance, joy.

Why should the world always be adjusted to the human? Huge amounts of material and energy are involved, and constant failures the result. Let us rather adjust man himself to his needs, the sensor-motor loop runs on the inside of the body after all. Human 'nature' can be encroached upon, since it has always been the construct

of a psycho-socio-cultural process. The individual's *dignity* should *not be violated*, this is the only condition.[31]

In times of creation of needs, design has always to a large extent been self-design, design of the individual, of the individual nature.

In the age where the human has been industrially designed, the body surface is no longer a boundary. Immense new design tasks are opening up. Aesthetic body-orientation turns the body into a symbolic system of signs: fitness-cult, body-cult, cosmetic surgery, etc. are part of everyday life.

So far, we have dealt with rather half-hearted approaches. The extreme alternative of complete de-corporalisation does not sound very convincing. It seems that the mind is dependent on the body as a substratum, that it is a phenomenon of bodily emergence. And more importantly: the inside of the body remains the most important sensor. Von Foerster:

> Since we only have around 100 million sensory cells, whilst our nervous system has close to 10,000 billion synapses, we are 100,000 times more receptive to changes in our internal environment than to changes in our external environment.[32]

Let us therefore make use of the immense possibilities of this inner sensory equipment. Self-participation in this design process makes it all the more appealing. Let us cross the border and practise design inside of the human body. Let us bring the sources of stimulation closer to the sensory apparatus:

The chemical industry is working flat out on developing legal drugs capable of producing pharmaco-realities. Decades before the 'Matrix' (in his book 'Futurological Congress') Stanislaw LEM depicts very impressively what sort of scenario we would be looking at if any number of tailor-made layers of reality were produced pharmacologically to be distributed in the system of the 'pharmacocracy', without anyone being aware of it. Further technological and scientific prerequisites for such scenarios are being developed as we speak: VR-technologies, bio-engineering, prosthetics, and especially nano-technology ('molecular machines': mechanical, sensory, computational – already available are logic-elements, Fullerenes, nano-tubes, etc.). Comparing the scale of a synapse with that of a nano-component, we get an idea of the immense possibilities to be found here.[33]

What sets the new models apart from the rest is, according to Maldonado, that they are the most real virtual models ever conceived – real in the sense of a greater formal, structural and functional similarity with the objects they represent, meaning models which are operatively more reliable, and which can be used as cognitive instruments.[34]

On the other hand, we are dealing with phenomena, which are inaccessible to our human external sensory apparatus (physical

effects in interaction with our body are visualised). In this sense, reality is not represented but produced/generated. We should therefore rather say that they are the *most virtual real models* there ever were.

And once more, it becomes apparent that the old dualism has become unsuitable. Probably without always being aware of it, medicine is in the process of crossing the border of virtual-real, of blurring it or rather doing away with it. Whether medical methods reproduce images or whether they produce images, they always *create* realities. Duden has for example demonstrated quite impressively how the practice of examining pregnant women using ultrasound has contributed to producing the problematic reality of the 'unborn life'.[35]

## Examples: Body-Games

These days, maintaining good health – fighting against fear of death – has become a design objective.[36] The design-ability of our life stories has become characteristic of modernity. Life has become an individual project. Under these circumstances, the concern and provision for health are tasks, which individualised society demands and supports. Health turns into a pressure to perform, in order to assert oneself within individualised market society. And it goes even further: *'If the belief in a hereafter dissolves, health gains a new meaning, increases in value and is turned into a potential earthly promise of salvation'*.[37]

So why don't we carry on spinning this idea? The real thrill lies within our bodies, the direct, highly ecological form of sensory production with few minimised products. We don't need new continents or universes, we just need our bodies. And we combine the pleasurable (entertainment) with the useful (affordable health). Pleasure and risk are all up to ourselves. The danger involved is no higher (but also no less) than driving our machines of desire along the motorway.

*Contents of the game-packs: each box will contain one CD and one intelligent nano-pill.*

**Clean Your Tubes**                                    $ 99
Adventure holiday inside your own body.
White-water experience and working in desolate tubes.

**Cancer – Tours / AIDS – Tours**                       $ 399
Fighting the enemies inside of you.
It's just you and your micro-laser- gun.
Different levels, different backgrounds
(cityscape, jungle, fantasy, reality, etc.)

**Brain – Trips**                                       $ 499
Soft Touch – High Effects – also available for two players.
Total self-referentiality.
Warning: Short-circuits are inevitable.

**Self – Design** $ 799

The little genetic engineer.
For beginners and advanced.
No responsibility taken for results.
Warning: Children will be held responsible for their parents!

## Conclusion: So What?

Is this cynicism? No, but it is irony, an incitement to reflection of various viewpoints. What we have to remember is that technology is not a strange 'big other'. Human thinking and human interpretations of the world have never been more complex than human technologies. Ever since becoming human, we have manipulated the world, made tools, computers, and machines. Our 'essential' centre has always been part of these machines and it changes as they change. Knowing and gaining more knowledge happens through action, not through non-action.

The difference between virtual/real becomes obsolete. Today we find ourselves in the position to play around with this. We create a new cultural layer. It seems as if the layer, which is newest at any given point in time dictates what is to be seen as 'sensible', yet without overcoming the layer beneath. This creates new choices for patterns of action and explanation, more potential for dealing with the complexity of the world. More virtuality (virtuality = inherent force or possibility).

The beginnings of the technological trajectories mentioned are there, their realisations could be on the market within the next ten years. From time to time, design voices its qualms concerning technological developments wrapped up as a sense of social responsibility. Usually this boils down to nothing more than helplessness concerning the discipline's function and competence. If design is asked to participate, it undoubtedly will. That's why it is better to think (ahead) for ourselves.

This is not blind affirmation but an appeal for active intervention. It is so much easier to say what we *don't* want, our index finger raised admonishingly, than it is to say what we do want. There is no field in which design couldn't/shouldn't potentially intervene, for today's problems and opportunities are orthogonal to all disciplinary boundaries. Design has the clear advantage of always having claimed to be general. Nevertheless, the discipline has to extend its range of tools in order to meet this requirement.

## Design Methods Revisited – Scenario Building

It would be a different paper to work this out in detail. But I want to frame this outcome and give some hints and I want to come back to the initial claim that design should be *more arrogant + more modest* at the same time. As to arrogance: design should intervene in processes of this scale, it should offer its competence of dealing with future uncertainty, and as to modesty: design should not claim

to give final solutions or moral guidelines, but rather decision aids for people.

In my view, the ultimate tools are scenario approaches, which are able to provide frameworks and guidelines for democratic decisions, and not the decisions themselves. Here I completely agree with Manzini in arguing that visions are needed: *"Making this 'visible', producing new scenarios for quality, can be a specific task for designers. In my opinion it is really their most specific task".*[38]

The essential difference of my approach is that I am consciously taking into account uncertain future contexts. One might call the latter the macro/global scenarios (which designers cannot design) as opposed to design scenarios. We should keep in mind some basic design theory. As Alexander states:

> ... every design problem begins with an effort to achieve fitness between two entities: the form in question and its context. The form is the solution to the problem; the context defines the problem. In other words, when we speak of design, the real object of discussion is not the form alone, but the ensemble comprising the form and its context. Good fit is a desired property of this ensemble which relates to some particular division of the ensemble into form and context. ...[39]

And he continues:

> The form is a part of the world over which we have control, and which we decide to shape while leaving the rest of the world as it is. The context is that part of the world which puts demands on this form; anything in the world that makes demands of the form is context. Fitness is a relation of mutual acceptability between these two. In a problem of design we want to satisfy the mutual demands which the two make on one another. We want to put the context and the form into effortless contact or frictionless coexistence.[40]

'Body games' present a form according to Alexander's notion – a de-contextualised design solution or a design scenario. In order to become useful design (together with Futures Studies, for example) should provide different global contextual scenarios (covering all possible states, not only the preferred ones), so that people are enabled to consider possible fits and non-fits of design scenarios and context scenarios. In my view, it is essential to make this difference between design scenarios (to be designed) and global scenarios (to be taken into account). Otherwise, we run the risk of considering ourselves as world designers or global healers, which is not really helpful for the disciplinary development.[41]

### Again: So What?

Man will always be the 'projective animal'. Man will try out what is possible. But – and here comes my delicate and decent ethical statement – we might be able to change the nature of our projects: from *poiesis* to *praxis*, from making to acting, from material to immaterial, from form to interface …

Things aren't going backwards, only forward! So why not participate offensively? It is about time that design should get involved in discussing the essential question: *How do we want to live?* On its own initiative, design has to invent, visualise, publicise and debate possible varieties of needs.

We are just about to live in a world of unlimited technological possibilities, where it is no longer appropriate to set up design-guidelines in terms of material, technology, form etc., instead *human values* should be at the heart of new design-guidelines. *Values are evolving. Values develop from preferences. Preferences develop from attentiveness. Design therefore has to create attentiveness for possible futures.*

### Notes

1. John Chris Jones *Essays in Design* Chichester: John Wiley & Sons, 1984.
2. Ezio Manzini 'Prometheus of the Everyday: The Ecology of the Artificial and the Designer´s Responsibility', in Buchanan, Margolin, eds. *Discovering Design* Chicago ILL: The University of Chicago Press, 1995, p. 224. (Also see previous issue of *Design Philosophy Papers* no 1, 2005: Interview with Ezio Manzini; Anne-Marie Willis 'Scenarios, Futures and Design'; and first issue of DPP no 1, 2003: Ezio Manzini 'Scenarios of Sustainable Wellbeing' – Ed.)
3. Anthony Giddens *Konsequenzen der Moderne* Frankfurt M.: Suhrkamp, 1995 and Ulrich Beck *Risikogesellschaft. Auf dem Weg in eine andere Mod*erne Frankfurt M.: Suhrkamp, 1986.
4. Slavoj Zizek 'You May!' in *London Review of Books*, Vol. 21 No. 6: 18 March 1999, p. 1.
5. Ibid.
6. Vilem Flusser *Vom Subjekt zum Projekt. Menschwerdung.* Frankfurt / M.: Fischer Taschenbuch Verlag, 2000.
7. Peter Sloterdijk *Regeln für den Menschenpark*, Frankfurt M.: Suhrkamp Verlag, 1999 (see also: http://menschenpark. tripod.com/).
8. Ibid, p. 10.
9. Ibid, p. 14.
10. Antonio Damasio *The Feeling of What Happens* San Diego New York London: Harcourt, 1999.
11. Christoph Wulf 'Körper und Tod' in Kamper, Dietmar & Wulf Christoph (eds) *Die Wiederkehr des Körpers* Frankfurt M: edition suhrkamp, 1982, pp. 260–261.

12. Michel Tibon-Cornillot 'Die transfigurativen Körper. Zur Verflechtung von Techniken und Mythen' in: Kamper & Wulf *op cit* p.160.

13. Max Weber *Die protestantische Ethik und der 'Geist' des Kapitalismus* Bodenheim: Neue Wissenschaftliche Bibliothek (Ausgabe auf der Grundlage der Fassung von 1904/05), 1993.

14. Peter Krieg *Maschinenträume. Mythen der Moderne III* Frankfurt M.: Zweitausendeins, 1990.

15. For example, Marvin Minsky *Mentopolis* Stuttgart: Klett-Cotta, 1990.

16. Niklas Luhmann *Die Kunst der Gesellschaft* Frankfurt M.: Suhrkamp, 1995, p. 243.

17. Jean-Francois Lyotard *Immaterialität und Postmoderne* Berlin: Merve-Verlag, 1985.

18. Donella H. Meadows, Dennis L. Meadows, Jørgen Randers *Die neuen Grenzen des Wachstums. Die Lage der Menschheit: Bedrohung und Zukunftschancen* Stuttgart: DVA, 1992. (Original: *Beyond the Limits* Chelsea Green Publishing Co., Post Mills, Vermont, USA 1992).

19. Stephan Breuer *Die Gesellschaft des Verschwindens. Von der Selbstzerstörung der technischen Zivilisation* Hamburg: Junius-Verlag, 1992, p. 12.

20. Friedrich Schmidt-Bleek *Wieviel Umwelt braucht der Mensch?* MIPS Das Maß für ökologisches Wirtschaften Basel: Birkhäuser Verlag, 1994.

21. Ernst Ulrich Von Weizsäcker, Amory B. Lovins, Hunter L. Lovins, *Faktor vier. Doppelter Wohlstand – halbierter Naturverbrauch* München: Droemer Knaur, 1995.

22. Norbert Elias *Was ist Soziologie?* München: Juventa Verlag, 1979, 7.Aufl. 1993, pp. 131-2.

23. Heinz Von Foerster 'Erkenntnistheorien und Selbstorganisation' in Siegfried J. Schmidt (ed) *Der Diskurs des Radikalen Konstruktivismus* Frankfurt M.: Suhrkamp, 1987, pp.133–158.

24. Gerhard Roth 'Erkenntnis und Realität: Das reale Gehirn und seine Wirklichkeit' in Siegfried J. Schmidt *Der Diskurs des Radikalen Konstruktivismus* Frankfurt M.: Suhrkamp, 1987, pp 229–255.

25. Niklas Luhmann *Die Wissenschaft der Gesellschaft* Frankfurt M.: Suhrkamp, 1990, p. 84.

26. Niklas Luhmann 'Der medizinische Code' in: *Soziologische Aufklärung 5. Konstruktivistische Perspektiven* Opladen: Westdeutscher Verlag, 1990.

27. Donna Haraway *Die Neuerfindung der Natur. Primaten, Cyborgs und Frauen* Frankfurt/New York: Campus Verlag, 1995, p. 40.

28. Paul Virilio, *Die Eroberung des Körpers. Vom Übermenschen zum überreizten Menschen* München und Wien: Edition Akzente Carl Hanser Verlag, 1994, p. 109.

29. *Ibid* p.111.
30. Tibon-Cornillot 'Die transfigurativen Körper. Zur Verflechtung von Techniken und Mythen' in: Kamper; Wulf (Hrsg.) 1982, p.159.
31. Richard Rorty *Kontingenz, Ironie und Solidarität* Frankfurt M.: Suhrkamp, 1992.
32. Von Foerster *op cit.*
33. See also Michael Crichton *Beute* München: Goldmann, 2004.
34. Tomás Maldonado 'Technologischer Körper und Wissenschaft' in: *Kölner Design Jahrbuch 1994* S. 19–31, 1994.
35. Barbara Duden *Der Frauenleib als öffentlicher Ort. Vom Mißbrauch des Begriffs Leben* Hamburg/Zürich: Luchterhand, 1991.
36. Elisabeth Beck-Gernsheim 'Gesundheit und Verantwortung im Zeitalter der Gentechnologie' in: Beck; Beck-Gernsheim (Hrsg.) *Riskante Freiheiten* Frankfurt M.: Suhrkamp S. 316–335, 1994.
37. *Ibid* p. 319.
38. Manzini, op cit, p. 237.
39. Christopher Alexander Notes on the Synthesis of Form Cambridge, Mass.: Harvard University Press, 1964, p. 15.
40. *Ibid* p. 18, 19.
41. For more detailed information on the scenario approach see, for example, Peter Hohmann and Wolfgang Jonas 'Design scenario building – an integrative process model for projective design tasks' *design + research* international conference, Politecnico di Milano, May 2000. (Also see previous issue of *Design Philosophy Papers* no 1, 2005: Interview with Ezio Manzini; Anne-Marie Willis 'Scenarios, Futures and Design'; and first issue of DPP no 1, 2003: Ezio Manzini 'Scenarios of Sustainable Wellbeing' – Ed.).