Michael Hanke

Vilém Flusser's Philosophy of Design: Sketching the Outlines and Mapping the Sources

1. Introduction

A comprehensive investigation of Flusser and Design requires a preliminary critical examination of particular texts he produced throughout his career. The most relevant design publications which we will examine here are: first, his book *Vom Stand der Dinge – eine kleine Philosophie des Design* [On the State of Things – a small philosophy of design], edited by Fabian Wurm (Flusser, 1993a); second, a similar selection in English titled, *The Shape of Things – a philosophy of design,* edited by Martin Pawley (Flusser, 1999); and a third book, *O mundo codificado. Por uma filosofia do design e da comunicação* [The codified world – towards a philosophy of design and of communication] (Flusser, 2007), which was published in Brazil and edited by Rafael Cardoso. In addition to these books, a fourth source is the special edition of a journal of architecture dedicated to Flusser with the title *Virtuelle Räume – Simultane Welten* [Virtual Spaces - Simultaneous Worlds] (Flusser, 1992). The journal is *Arch+ Zeitschrift für Architektur und Städtebau* [Arch+ a Journal for Architecture and City Planning], and represents the discovery of Flusser in the field of architecture, which must be taken into account in this context of design. Setting aside the many unpublished manuscripts, his essays in these four publications represent the essential references for a critical reading and analysis on the topic of design in Flusser's work.

2. Collections – Wurm and Pawley

Like many of Flusser's books, Wurm's and Pawley's collections of articles were not produced or edited by Flusser himself, but published posthumously by an editor who selected the texts and assembled them. This selection, nineteen in the case of Wurm, and twenty-two in the case of Pawley, depended on the knowledge the editors had of the flusserian texts – a complex situation, since they

are written in different languages and appear in different journals, by different editors. Seventeen articles found in Wurm's as in Pawley's selection are identical, so we can consider these the most basic and relevant.

Martin Pawley (1938-2008), was a British writer, teacher and critic, and considered "one of the most insightful and provocative commentators on contemporary architecture and design" (Jenkins, 2008). Fabian Wurm, for many years was an editor of the design magazine *Design Report (DR)*, where 10 of the 19 articles in the book edited by him had been published, all between 1989 and 1991. Eight of the ten are first publications, signifying that Flusser obviously wrote them specifically for the magazine, and wrote the articles on this particular subject to take advantage of this publication opportunity. The other articles were published for other purposes and in other contexts.

The subtitle of *DR* is *Mitteilungen über den Stand der Dinge* [Reports on the state of things]. The title of Wurm's selection of Flusser's articles, *Vom Stand der Dinge*, obviously refers to the subtitle of the magazine. One of the articles Flusser published in *DR*, again, has the title *Der Krieg und der Stand der Dinge* [War and the state of things], so we can assume that Flusser was inspired by the subtitle of the magazine for the title of this essay. This article, in Pawley's, edition is translated as "War and the State of Things", but the title of the book, edited by Pawley is not *The State of Things*, as in Wurm's edition, but *The Shape of Things*, a clearer reference to design.

However, neither Pawley nor Wurm give us sufficient information about the circumstances of the first publication of Flusser's works on design, which is relevant to understanding why Flusser turned to this topic in the first place. Wurm at least gives us a hint. The first of the series of articles on design, "Design: Obstacle for/to the Removal of Obstacles", first published under the title of *Gebrauchsgegenstände* in *Basler Zeitung* [Objects of Use], September 8, 1988, is considered a paper for presentation at the *Vortrag auf dem 'Internationalen Forum für Gestaltung*'- IFG [International Forum for Gestaltung – IFG], in Ulm, September 2, 1988. However, this information is incomplete. Moreover, the very name of the town of Ulm should raise suspicion. The IFG is the successor of the legendary *Hochschule für Gestaltung* - HfG, founded after the second World war in 1953 by Inge Scholl and Otl Aicher as a follow up to the Bauhaus, together with Max Bill, who was also a scholar from Bauhaus. This tradition is also revealed by the fact that Walter Gropius inaugurated the HfG on October 2, 1955.[1] The HfG, having closed down in 1968 because of financial problems, was succeeded by the IFG, and restarted its activities in 1988 with the first of a new series of conferences, *Gestaltung und neue Wirklichkeit* [Design and New Reality], a title considered programmatic for the new IFG. From

1 http://www.hfg-archiv.ulm.de/die_hfg_ulm/timeline.html

then on, its homepage reads, "the institution [the Ulmer Kuhberg, as is the name of the location] plays a role again when design themes are discussed. The forum succeeded in gathering renown personalities from the area of design, art, economy and politics as speakers and moderators for their events."[2] As one of these important personalities, the homepage names Vilém Flusser, along with other names like Zaha Hadid and Daniel Libeskind.[3] And Flusser's appeal to dealing critically with new digital media, and exploit their full potential to the benefit of mankind, corresponds to the fundamental idea of a social Utopia similarly developed by the Bauhaus and the HfG: to change society by design (Gestaltung) (Humpenöder, 2016, p. 12).

The first congress on September 2-4, 1988, *Gestaltung und neue Wirklichkeit* [Design and New Reality], consisted of seven symposiums, the sixth of them entitled *Freiheit – Verantwortung – Gebrauchsgegenstände* [Liberty – Responsibility – Objects of Use]. Roundtable participants included: Vilém Flusser, presenting *Gebrauchsgegenstände* [Objects of Use], and Dr. Dietrich Mahlow, who Flusser met in 1987, when Mahlow planned an exhibition with him and Jacques Derrida at the New York Guggenheim-Museum. This exhibition project titled, "The Image of Thinking," was never implemented. There are several letters on the matter in the Flusser Archive, and Flusser mentions the project in the article *Abbild – Vorbild oder: Was heißt darstellen?*, published in *Lob der Oberflächlichkeit* (Flusser, 1993c, p. 306). On this roundtable with Flusser, Mahlow spoke about *Wie das Denken in die Kunst kam und was sie bewirken kann*, and Prof. Dr. Klaus Krippendorf presented, *Zum Kontext des Artefakts*. The table was chaired by Florian Rötzer.[4] Flusser also met with Karl Gerstner, Jürgen Claus and Max Bill. There is no evidence that Flusser had any contact there with Max Bense, who passed away in 1990. Bense taught at the HfG until 1958, and for his poetry series *rot*, Flusser translated a poem by Haroldo de Campos in 1966. Nevertheless, Flusser was obviously inspired to reflect on design as a topic through these circumstances, and he takes a rightful place in this intellectual history.

In light of this information, we can safely say that Flusser's first article on design, republished in *DR* (# 9, 1989) was an invited speech delivered to the IFG-congress in 1988, and originally titled "*Gebrauchsgegenstände*" [Objects of Use]. Coincidentally, Flusser had reflected on this topic already in Brazil and frequently published articles on the subject, some of which are collected in the book manuscript *Coisas que me cercam* [Things that surround me], from 1971, treating objects of use like

2 In German: "Seither ist der Ulmer Kuhberg wieder mit im Spiel, wenn über Gestaltungs-Themen reflektiert wird. Dem Forum gelang es, renommierte Persönlichkeiten aus dem Design- und Gestaltungsbereich, aus Kunst, Wirtschaft und Politik als Referenten oder als Moderatoren zu den Veranstaltungen zu gewinnen." http://www.hfg-ulm.de/702.html [accessed 03/27/2016].
3 http://www.hfg-ulm.de/14.html
4 http://www.hfg-ulm.de/31.html

bottles, carpets, pots and wheels (FLUSSER, 1993b, p. 5). This, perhaps, led to him being considered capable of contributing to the topic of the congress and therefore to his invitation. In any case, "Things that surround me" reflects the culture-nature debate, and the transformation of nature into human culture as one of the basic undertakings of man. So design is related to Flusser's philosophical anthropology and other related matters. Seen this way, a series of further articles of Flusser contribute to the topic of design in his approach.

In addition to the main title, the subtitle of Wurm's collection – a philosophy of design – is also flusserian, which shows an emphasis on philosophy. In all probability, few who work in design are as deeply interested in philosophy as Flusser was. In fact, Flusser's first cut, which is known to be always the deepest, was by philosophy, and this always underlined his approach to other subjects - as in turning to communications, this turns into a philosophical reflection of communication, and this is also the case with design. Moreover, Flusser's framework is a philosophy of design, and not so much a theory of design.

2.1

Unlike Pawley, who does not organize the articles into chapters, Wurm organizes the nineteen articles in four chapters: theoretical fundamentals of design; the state of things; objects and buildings; and prospects.

The first article Flusser wrote on design is "*Gebrauchsgegenstände*" [objects of use], published as "Design: Obstacle for/to the Removal of Obstacles" in *DR* (#9, 1989), and presented at the *Gestaltung und neue Wirklichk*eit at the round-table on "objects of use". This explains why Flusser initially reflects on two concepts: "objects of use" and "*Gestaltung*" [creating things]. As objects of use, in other words, "culture" (1999, p. 59), they have been developed by other people, and "were projected as designs on the part of the people who went before" (1999, p. 58). They "are therefore mediations (media) between myself and other people, not just objects" (p. 59). Therefore, they are not only "objective", but also "inter-subjective" and "dialogic". And dialogue for Flusser is derived from Plato's concept of dialogue, which requires , in Greek – *logon didonai*, the justification of anything that was said by providing additional reasons (what again guarantees the dynamics of the process). Since objects of use for Flusser are dialogic, they require "responsibility" from those who produce them towards their fellow men and followers, paraphrased as "the decision to answer for

things to other people" (p. 59). Focusing only on the object implies the detriment of the intersubjective component of culture/objects of use: "the more I direct my attention towards the object in the creation of my design (the more irresponsibly I design it), the more the object will obstruct those coming after me, and the area for maneuver in the culture will shrink" (1999, p. 59). And "the current situation of culture […] is characterized by objects of use whose designs were created irresponsibly, with attention directed towards the object" (1999, p. 59-60). This situation has a longer history, which, for Flusser, goes back at least to the Renaissance, and not only to the industrial revolution, where modern man and his scientific and technical progress have their starting point.

This progress has such a hold that those creating designs meanwhile forget that other progress, progress in the approach to other people. Scientific and technical progress has such a hold that any act of creating designs responsibly is thought to be a backward step. The current situation of culture is as it is precisely because creating designs responsibly is thought to be backward-looking. (1999, p. 60)

Flusser's hope was that the new "'immaterial culture' beginning to grow", which probably even "would not be less obstructive", and "probably restricts freedom even more than the material one" (1999, p. 60), but nevertheless "spontaneously directed towards other people", would be "instructed by the immaterial itself about how to create designs responsibly" (p. 60), and turns visible their "mediated, inter-subjective, dialogic side" (p. 61).

Here we find typical elements of flusserian theory: critique of the current cultural situation, including scientific and technical progress, a strong emphasis on dialogic and the social constitution of the human being, and the impact of the digital revolution, to name only a few. He also uses these elements in the context of design, which is to be expected if we consider that he was invited in order to defend his position.

The second article on design, published in *DR* (# 10, 1989), is "Shamans and Dancers with Masks," a typical flusserian title in respect to its baffling function. It begins with a radical dialogism even schooled on Ernst Mach: the only existing reality are relations, "we are in effect knots of relations (connections) without any core (any 'spirit', any 'I', any 'self', indeed without anything at all to 'identify' ourselves by). […] To put it another way: The 'I' is then that abstract point at which concrete relations begin" (1999, p. 104). And a "person" is such a "nodal intersection in the mutually intersecting social and inter-subjective fields" (p. 105), *persona* being the Latin translation of what earlier had been called a *mask*. Masks are like social roles, and therefore the 'I' is that which one says

'you' to" (p. 105). Society represents a network made up of masks "condensed into 'persons'" (p. 105). This poses the question where masks come from, what makes up "the design of a mask" (p. 106). And as masks "are themselves inter-subjective forms", "the question of the design of masks is an inter-subjective issue. This means: That which I am, I only became through a collective 'dialogue'", a reciprocal relation: "The 'I' is not only that which one says 'you' to, but also that which says 'you'" (p. 106). And this movement towards the other, fellow man implies the possibility of asking questions, an observation that leads Flusser to a quite peculiar definition of design. "*Design* means, among other things, fate. This process of asking questions is the collective attempt to seize hold of fate and, collectively, to shape it" (p. 107). What we witness here is dialogism and existentialism applied to design.

Flusser's third article in *DR* (#11, 1989), *Why Do Typewriters Go 'Click'?*, had been published in 1988, in a newspaper that was not related to the topic of design. Consequently, the article doesn't address the topic. It treats a theme that Flusser treated in uncountable occasions: the change from letters to numbers, from linear to punctual culture, the process by which "numbers […] break out of the alphanumeric code and make themselves independent" (1999, p. 62). The core of the media revolution, whose logic can be seen in the mechanism of the typewriter, is described by Flusser thus: "Numbers abandon the alphanumeric code in favor of new codes (the digital code, for example) and they feed computers. Letters (if they want to survive) have to simulate numbers. This is why typewriters go 'click'" (p. 62).

Clearly, this is more an article about media change (the reason for the article being reprinted in a magistral selection of contributions on media theory). Another reason for the article's relevance to design is that "the cultural revolution now under way is all about […] the ability to set alternative worlds alongside the one taken by us as given" (p. 65), i.e. the design of new (virtual) realities. This is a crucial change that turns mankind from subjects (that are as such related to objects) into projects on the basis "(t)hat we have started to learn how to calculate" (p. 65), a thesis that forms the title as well as the essence of Flusser's last book *From Subject to Project*.

The fourth article in *DR* (#12, 1989) is "The Lever Strikes Back", a fine masterpiece in the application of Marxian thought (Flusser affirms he has "a solid Marxist basis", 2002, p. 199), as it is based on the idea that man develops machines, extensions of human capabilities, that eventually strike back on him, changing him and the whole relation between man and machines: "the 'Man/machine' relationship was reversed, and Man did not use machines any more but was used by them. He became a relatively intelligent slave of relatively stupid machines" (1999, p. 52).

Nowadays, in times of "the second or 'biological' Industrial Revolution" (1999, p. 52), we are able to construct new machines – the Internet of Things – that, similarly, will strike back on us, but they will be a lot smarter, and: "This is a problem of *design*: What should machines be like if their striking back is not to cause us pain? Or, better still: if it is to do us some good?" (1999, p. 53). Referring to his example of "stone jackals", Flusser elaborates:

Naturally, we can design them in such a way that they lick us instead of biting us. But do we really want to be licked? These are difficult *questions* because nobody really knows what they want to be like. However, these issues need to be addressed before one can start to design stone jackals (or mollusc clones or bacterial chimeras for that matter). (1999, p. 53-54)

And, considering such issues more interesting than stone jackals, Flusser turns directly to designers and asks them: "Are designers ready to address them?" (p. 54). So the question here is about the consequences that the construction (i.e. design) of new artificial intelligences have on human beings and their life-world.

Flusser's fifth article in *DR* (#14, 1990) is "Design as Theology". Here he analyzes the impact that the difference between the "only two peaks in human civilization" (p. 74), namely the two cultures of the West and the East, have on their respective world-views, "the fundamental difference between East and West" being "their attitude to life and death" (p. 75), which again explains the title. The outcome of this difference is that "in the West, therefore, design produces people who engage with the world, in the East it is the way in which people spring up out of the world so as to experience it" (p. 72). From the Western attitude arose Greek philosophy, Jewish prophecy, and hence Christianity, science and technology, and from the Eastern attitude an aesthetic and pragmatic approach to life difficult for Westerners to fully understand (p. 75). Nevertheless, the new "digital computer codes" (p. 73) might be a basis for "a blurring of East and West that […] is expressed in the design of post-industrial ('post-modern'?) products" (p. 74). Also in this essay, Flusser draws on prior studies, having delved in Eastern thinking in the sixties.

It is only after these efforts that Flusser writes the article "About the Word *Design*", published in *DR* (#15, December 1990), which both Wurm and Pawley posit as the first of their collections, obviously to open with a conceptual framework ("Fundaments" is the chapter title by Wurm). Flusser indeed outlines, with a few brief strokes, the field of *design* – a word, as a noun, connected to *intention, plan, scheme, basic structure,* also *to draft, sketch, to simulate*. The element of deception implied here has to do with "the fact that 'design' is related to 'sign'" (1999, p. 21), derived from Latin *signum*, and signs are always treacherous – as Umberto Eco, who Flusser admires and refers to (but not in

this context), stated, semiotics, the doctrine of signs, is about everything that can be used to lie, i.e. to conceal anything, including truth (Eco, 1987, p. 26). Defining design as "the basis of all culture" means "to deceive nature by means of technology, to replace what is natural with what is artificial", and this is why "(t)he words *design*, *machine*, *technology*, *ars* and *art* are closely related to one another, one term being unthinkable without the others" (Flusser, 1999, p. 18). The importance the word design has in contemporary discourse results from "our awareness that being a human being is a design against nature" (1999, p. 19). This omnipresence of design implies a devaluation of great ideas, the material and the work behind them, a "devaluation of all values", referring to the famous phrase coined by Nietzsche, which Flusser regularly draws on without referring to its source, as in this case. This postmodern relativization applies also to Flusser's article itself, that could have been designed in another way: "Everything depends on Design" (p. 21).

In "War and the State of Things", published in *DR* (#16, 1991), Flusser, referring to Goethe, one of his favorite authors whose work accompanied him throughout his entire life, builds his reflection on Goethe's recommendation, "that Man be 'noble, generous and good'" (p. 30). But this would, if applied today, require a redefinition of what the meaning of the word *good* should be, and also the term *Man*. The term *Man,* "after the demise of humanism", can no longer be used in a general sense. When Goethe's phrase was transferred to the debate about design, it could be reformulated to "Let Man be elegant, user-friendly and good" (p. 30), which is the outline of this article in question. Even though he refers to the examples of rockets, paper-knives and arrow-heads, Flusser does not intend "to argue against the progressive improvement of design as a result of war", because if "in their day our ancestors in East Africa 100,000 years ago had not designed arrow-heads that were at the same time elegant, user-friendly and good (and that could kill with elegant convenience), then we would probably still be laying into each other or into animals with our teeth and nails" (p. 31). Even if it "may be that war is not the only source of good design", it is, at least, one of them (p. 31). Using the discrimination between "pure good ('moral' good), which is good for nothing", and "applied good ('funcional' good)", between which "there can be absolutely no compromise, because in the end everything which is good in the case of applied good is bad in the case of moral good", Flusser comes to the conclusion that, "Whoever decides to become a designer has decided against pure good", and always remains "trapped within the ambit of funcional good" (p. 33). Unfortunately, everything that is good for something can be misused, and thus "is pure Evil"; "wherever there is a purpose for anything, you will find the Devil in wait", and: "Since the technicians had to apologize to the Nazis for their gas chambers not being good enough – i.e. not

killing their 'clients' quickly enough – we have once more been made aware what is meant by the Devil" (p. 34). But despite knowing all this, we insist "that the designer should be noble, generous and good", Flusser ends by returning to Goethe's opening phrase.

In "With as Many Holes as a Swiss Cheese", *DR* (#17, 1991), first published under the title *Einiges über dach- und mauerlose Häuser mit verschiedenen Kabelanschlüssen* [Some remarks about houses without roofs and walls, but with diverse cable connections] in *Basler Zeitung* # 69, March 22, 1989, the manuscript "*Häuser bauen*" [Building houses], proposes one of Flusser's main thesis, which he frequently presented and varied on various occasions: the revolution in communications destroys the traditional dichotomy between private and public – the house/home, which, until then, had been a closed entity, preventing any intrusion from the outside had lost its function as a shield because of material and non-material channels serving communication media, and therefore become perforated, riddled with holes like Swiss Cheese (thus the title). This is about the structure of housing in the electronic age, the loss of privacy and vice versa the privatization of public space. It is not *stricto senso* a question of design, because none of these elements were planned. The dialectics of private and public, based on the principle that, "One goes out to experience the world, and there one loses oneself, and one returns home in order to find oneself again, and in so doing one loses the world that one set out to conquer" (1999, p. 82), which Hegel called the 'unhappy consciousness', is no longer operative. As material and immaterial cables have turned the 'home-as-one's-castle' into a ruin, as Flusser affirms, "with the wind of communication blowing through the cracks in the walls […] what is needed is a new type of architecture, a new design" (1999, p. 83). The key heretofore, according to Flusser, is that architects and designers "provide a network of reversible cables", instead of one-way directed cables, that come along with the danger of "unimaginable totalitarism […] a technological revolution that would go far beyond the competence of architecture and design" (1999, p. 83). This situation demands that we face the adventure that the new network represents to us, and do it successfully.

In "The Designer's Way of Seeing", *DR* (#18-19, 1991), as the ninth of the *DR* articles, Flusser makes an initial reference to his media theory, which conceives of media as extensions of human physical abilities, in this case, the eye. Seeing, according to this theory, "has undergone a series of technical improvements since the invention of the telescope and the microscope", and more recently, "the ability to condense all time into a single point in time and see everything simultaneously on a television screen" (p. 39). This is considered a last and most recent step in a development that had already begun in the third millennium A. C. in Mesopotamia, when people by looking upriver

foresaw floods and droughts and on the basis of these observations "marked lines on clay tablets indicating canals that were to be dug in the future". In those days, "these people were thought of as prophets, but we would call them designers instead" (p. 39). Yet, foreseeing the future course of the river is not just a look into the future, since it provides knowledge about the form of all watercourses, and on a more general level to the form of all trajectories in which bodies move in gravitational fields, and thereby to eternal forms (p. 40). What we perceive through "fleeting phenomena" is what Plato called, according to Flusser, "the eternal, immutable Forms ('Ideas')", and this marks also the beginning of theory - "in Greek, 'truth' and 'discovery' are the same word – i.e. *aletheia*" (p. 40). Even though nowadays we no longer share the view that forms are discovered, but rather invented, nevertheless, as Flusser elaborates, "forms, whether discovered or invented, whether made by a heavenly or human designer, are eternal – i.e. free of all time and space" (p. 41). Once again, as he so often does, Flusser refers to Plato, but he adjusts his theory to our present state of knowledge, and this means: "All eternal forms, all immutable ideas, can be formulated as equations, and these equations can be translated from the numerical code into computer codes and fed into computers" (p. 41). The computer "can create 'numerically generated' artificial images" (p. 41), and looking at them the eye "continues to look at eternity, but this is now an eternity that it can manipulate", and this is what makes up "the designer's way of seeing" (p. 42). Flusser thus, in his typical fashion, ties together his reflections on the technical image and computational processing with basic philosophical Platonic theorems, and applies this to a new challenge, design, which is the focus of the magazine he wrote the article for.

The last article, published posthumously (Flusser had passed away in 1991) in *DR* (#20/21, June, 1992) out of a total of the ten, is title "About Forms and Formulae" and makes a similar argument. In ancient times it was believed that the "Eternal God" had formed the world, but after neurophysiology had "sussed Him out", now "every self-respecting designer" is capable of doing so. But the freedom to invent forms is limited by our central nervous system, that (pre-)configures how we perceive the world. "The world only accepts those forms that correspond to the program of our life" (p. 36). Yet we have invented methods and machines capable of proceeding similarly, therefore we can, "(a)part from the world computed by the central nervous system, […] also live in other worlds" – "Cyberspace" and " virtual reality" (p. 37). Any form or algorithm that can be expressed numerically can be fed via computer into a plotter. "And there you have it: worlds ready to serve" (p. 37). Just as the Creator did in the course of the much-celebrated six days, we are now the designers, and this changes our concept of reality: "'Real' means anything we, with our social status, efficiency

and perfectionism, give form to by use of the computer" (p. 37). However, Flusser would not be Flusser if he left it this way. The idea that we have figured out the Eternal God might be hubristic or pretentious, which is why he ends the article, referring to the myth of Prometheus, "Perhaps we think we are just sitting at computers, while in fact we are chained to Mt Caucasus? And perhaps there are eagles already sharpening their beaks so as to peck out our livers" (p. 37-38). Flusser may have been a theorist of new media, but he was just as well their critic.

The article "The Ethics of Industrial Design?", published by Wurm and Pawley, but not published in *DR*, was first published under the title "Ecological and anthropological feedback between tools and their users. Ethics in Industrial Design?", and synthesizes Flusser's thoughts more precisely. At the same time, it has a strong similarity to the idea in *The Lever Strikes Back*. It was a lecture that Flusser gave in English, in Eindhoven, Netherlands in April 1991, at a congress of the *Akademie Industriële Vormgeving Eindhoven, AIVE* [Design Academy Eindhoven]. It was first published in the congress papers, titled "Ethics in Industrial Design?" (Report Verlag Symposium April 20, 1991, ed. v. *Fré Ilgen, Eindhoven, Stichtag Akademie Industriele Vormgeving*). Thus, the subtitle that Flusser uses, "Ethics in Industrial Design?", which was then later used as the main title of the article, was obviously borrowed from the theme of the congress. The rearrangement of the title also obscures that the article primarily focused on the feedback between tools and their users, and only began to address design from this perspective, whereas the title of the publication inverts this relation.

In the past, designers pursued the production of useful objects, and their ideal was pragmatic, i.e. functional, and rarely affected by moral and political considerations. Moral norms were established by the public, either based on a superhuman authority or by means of consensus, or a combination of both. But this has changed. "The question of the morality of things, of the moral and political responsibility of the designer, has [...] taken on a new significance (indeed an urgency) in the contemporary situation" (p. 66). The reasons for this are threefold. First, the public no longer lays down norms. Although there are still a string of authorities (religious, political and moral), their power for defining public norms has diminished, "not least because the communication revolution has destroyed the public sphere we had known hitherto" (p. 66). Due to the plurality of culture and society any generalization of norms would have to proceed in an authoritarian manner and is therefore deemed to fail; science, the only authority more or less intact, can provide only for technical norms, but not for moral ones (p. 67). Secondly, industrial production, including design, has developed into a complex network, organized by the division of labor, which also divides personal responsibility within the greater set norms. This leads to a "lack of moral responsibility that follows

logically from the production process" that produces "morally objectionable products" if there is no "ethical code […] to be followed by design" (p. 67). Thirdly, in the past it was tacitly agreed that moral responsibility for a product lay with the user, not the producer. Flusser's striking example of this is the situation where if someone stabbed somebody else with a knife, it was he who was responsible and not the designer of the knife (p. 67). However, this has changed with automated machines. Flusser's question, "Whom should one hold responsible for a robot killing somebody?", and the possible answers: the person who constructed the robot, or the one who set up the computer program, an error in construction, programming or production, the branch of industry that produced the robot or the whole system to which this complex belongs (p. 67-68), resonates with the contemporary problem of killing drones. Not addressing "these questions can lead to total lack of responsibility", which is not a new problem, as Flusser demonstrates in "War and the State of Things" (see above). In the Nuremberg trials, a letter written by a German industrialist to a Nazi official was made public. "In it, the industrialist timidly begs to be forgiven for having constructed his gas ovens badly. Instead of killing thousands of people at one go, only hundreds were being killed" (p. 68). This demonstrates, that norms are no longer applicable to industrial production, that there is no single author of a crime, and that "responsibility has been so watered down that in effect we found ourselves in total irresponsibility towards acts resulting from industrial production" (p. 68). Flusser's recourse to the Gulf War as a recent case and the example of a helicopter pilot whose helmet is synchronized with the guns, with the go-ahead for an attack that can be given by the blink of an eye (p. 68), remotes to the killing drone above. If the ethical problems of design are not addressed, as Flusser's ending appeal urges that the cases referred to would be "merely the opening stages of a period of destruction and self-destruction" (p. 68). Once again, Flusser ties together a philosophical, ethical and political perspective to aspects of contemporary culture and to design.

"Shelters, Screens and Tents" was a lecture given in Graz, Austria, in 1990, at the culture festival *Steirischer Herbst*. The first of these series in 1990, which was continued up to 1995, "*Steirischer Herbst '90*", chose the title "nomadology", understanding mobility as an intellectual principle and an artistic impulse. The festival papers were published under this title: *auf, und, davon. Eine Nomadologie der Neunziger*, Graz: Droschl 1990. The first encounter and the publications of the book brought together authors reflecting on flight and forced migration (apart from Flusser, we have here Peter Sloterdijk). In the German title "*Schirm und Zelt*", Schirm refers to umbrella, something that offers shelter, just like a tent, but "*Schirm*" also means "screen", what explains the English translation of the title to "Shelters, Screens and Tents."

Umbrellas/shelters/tents belong to the list of objects we are surrounded by (the above invoked *coisas que me cercam* - things that surround me). But apart from their long history, "architects (and tent-designers in general)" have not yet perceived that they are dealing with the wind and not with gravity, "that the danger with shelters such as tents is not their falling down but their being swept away all over the place by the wind" (p. 55). But this will change, as "(p)eople will learn to think more 'immaterially' as soon as walls have been torn down" (p. 55). Tents differ from houses in their higher degree of mobility, which is not a bad start for "an analysis of the cultural change bearing down on us" (p. 56), and this change is marked by the revolution in communications and media in general, technical images in specific. "The fact that the tent wall is woven – i.e. a network – and that experiences are processed on this network, is contained within the word *screen*. [...] Since ancient times, the screen wall has stored images in the form of carpets. Since the invention of oil painting, the stored images are in the form of exhibited pictures. Since the invention of film, they have been stored, in the form of projected pictures, since the invention of television, it has acted as a screen for electromagnetically networked images; and since the invention of computer plotters, the tent wall, now in an immaterial form, has made possible the subdivision and diversification of images thanks to the processing of its network." (p. 57) The screen wall processes this network and makes the tent "a creative nest" (p. 57), and so once again Flusser adapts his theorems (like communications revolution, techno-image theory, contemporary culture) to the congress theme of mobility and its creative momentum.

"The Factory", one of the two works first published by Wurm's edition, was a talk given to an entrepeneur's round table — *Unternehmergespräch der Aktiengesellschaft für Industrieplanung (AGIPLAN)),* in Mühlheim/Ruhr*,* 1991, and the theme of the round table was "*Fabrik der Zukunft: Rückkehr der Architektur*" [The Factory of the Future: the return of architecture]. The written manuscript by Flusser, titled "Homo faber", again, gives a hint on how Flusser proceeded: he had his stock of theoretical basics (theorems, an expression used by himself), and adjusted them to the respective context of the event for which he was invited or participated, a sort of give and take. This could be criticized as an opportunistic adaptation to a given situation; but it can also be considered the other way around, as a proof of the strength of his theorems, which were almost universally applicable. Basic philosophical matters rarely change substantially.

"The Factory" in fact is a compressed version of Flusser's anthropology. The categorization of Man as *homo faber* (being less zoological than anthropological and also less ideological as *homo sapien sapiens*) "means that we belong to those kinds of anthropoids who manufacture something" (p. 43).

This is why "'factory' is the common human characteristic, which used to be referred to as human 'dignity'" (p. 43). If we want to know how Neolithic human beings lived, "we can do no better than study pottery working-floors in detail", as "the science, politics, art and religion of the society of the time, can be traced to factory organization and the manufacture of pots" (p. 43). Similarly, if we see human history as the history of manufacturing "the following rough periods can be distinguished" according to the popular means used: "hands, tools, machines, robots" (p. 44). The hands being the primordial organs for manufacturing (and turning), "tools, machines and robots can be regarded as simulations of the hands which extend one's hands rather like prostheses", or extensions (Flusser uses this expression, made popular by Marshall McLuhan in this context, in Portuguese in some manuscripts). As the tools used have a feedback on their users, as expressed in the article already treated above, fabrics "are places in which human beings become less and less natural and more and more artificial, for the reason that the things turned into other things, the manufactures, strike back at the human being", and thus they are "places in which new kinds of human beings are always being produced: first, the handy-man, then the tool-man, then the machine-man, and finally the robot-man. [...] This is the story of humankind" (p. 44-45).

The first Industrial Revolution is the one from hand to tool; it creates a new form of human existence, governed by culture, by whom the human being is now protected and imprisoned (p. 45). The second Industrial Revolution is the one from tool to machine, but whereas in the case of the tool, the human being is the constant and the tool is the variable. Similarly, in the case of the machine, the latter is the constant and the human being is the variable, being ever replaceable. As a consequence, "(t)he second Industrial Revolution has cast the human being out of his culture just as the first one has cast him out of nature" (p. 45). Next, the third Industrial Revolution, "the one from machine to robot" (p. 45), in which "in terms of the simulation of hands and bodies" tools are empirical and machines are mechanical, "robots are neurophysiological and biological" (p. 46), and this will bring forth a new type of factory and culture. This includes also space, topology, "or, if you like, architecture" (p. 46). Homo faber, before the invention and use of the tool, had no defined location, he could act and operate anywhere. The production of tools, however, demanded specialized factory areas cut out of the environment ("for example, where flint is hewn out of rock, and others, where flint is turned into something else", p. 46). In machine culture, human architecture has to be subordinated to that of machines, with "enormous concentrations of machines forming clusters in a network of interaction", "the structure of factory architecture in the nineteenth and twentieth century" (p. 47). Robots then change this structure again fundamentally. Now, wherever the

human being "goes, stands or lies, he carries the robots with him (or is carried around by them), and whatever he does or suffers can be interpreted as a function of the robot" (p. 48). Thus, "the giant industrial complexes of the machine age die out like the dinosaurs and at best [are] exhibited in historical museums", the people, now connected by reversible cables, no longer stuck to places defined by the machine architecture. And this is what Flusser names "a telematic, post-industrial, post-historical view" (p. 48). It requires "the becoming immaterial of the factory" (p. 49), in other words new schools for manufacturing and learning, "i.e. acquiring, producing and passing on information" (p. 50). Flusser writes in 1990, this might sound utopian, yet "it is nothing but a projection of tendencies that can already be observed" (p. 50).

"Bare Walls" was first published under the title "Walls" in *Main Currents* in 1974. The article is similar, but not identical with the chapter "Walls" in the book *Things and Non-Things* (Flusser, 1993b, p. 27-32), and probably a short version of the latter.

Walls are considered to belong to those things we are surrounded by, perhaps more than anything else. When naked (bare), they remind us that nature, taken for granted, "has to be transformed into something man-made: culture", awakening "the human will to form a design" (p. 78). When Flusser affirms that "(s)tanding out against walls, Man identifies himself as a creature who opposes the formless chaos represented by the world" as part of "the activity of the human spirit working against entropy", he draws on a position developed as early as his first book, *Língua e realidade* (1963), where this function of erecting negentropic structures against the entropic condition of nature is essential for the development of culture. The paradigm for this construction of informational structures is language, but this is only one part of culture, and Flusser, not only due to the influence of Ernst Cassirer and his *Theory of Symbolic Forms* extends this insight to other elementary constituents like art, religion, philosophy and science, etc., and, consequently, also to design.

Nevertheless, apart from being constructed, once constructed, culture is a fact. "It is a mistake to say that culture is made by human beings and is therefore the realm of human freedom. For everyone living in a culture, it is something taken for granted just as nature is" (p. 78). With regard to objects of culture, we can establish a relation of 'philosophical distance', and on this basis, as "creatures of reflection and speculation", "develop a philosophy of culture" (p. 79). And culture appears to us in the form of a steady growing collection of things that we place up against the four walls of our dwelling to cover up their nakedness. This becomes even more plausible when we pay attention to the fact that one of the walls can turn "into a window without any glass in it" (p. 79), in

other words, a screen, and in this way Flusser relates the topic of walls to media theory. Together with the three remaining walls the screen turns the house into a theater and man to an actor on the stage, and: "Culture thus appears as 'fiction' (in the sense of *fingere*, 'to form', 'to design')" (p. 79). This is part of the human effort "to impose his will on nature", which in the end he cannot succeed, but even knowing this, "Man will still go on filling the space between the walls with things, as witnesses to his power of design" (p. 79). Thus, the first appearance of the term design in Flusser is here in this article, written in 1974, long before his contact to *DR* in 1989-1991, the German translation of design here being "*Gestaltung*". His reflections on design, we can claim therefore, are an outcome of his cybernetic culture theory, in which culture is seen as a negentropic project set up against the entropic void that nature is to us.

In "Wittgenstein´s Architecture", from 1991, he turns to one of his most strongly influencing authors, Ludwig Wittgenstein. Flusser draws a parallel between the architecture of Wittgensteins *Tratatus logico-philophicus* and the house Wittgenstein had built as an architect in Vienna. The short article was first published in *Welt/Fall* (Mönchengladbach 1991), which documented an installation by the editor Mischa Kuball in Wittgenstein's house.

"Form and Material", from 1991, was first published as a contribution to a book edited by Wolfgang Drechsler and Peter Weibel (*Bildlicht*, Vienna, 1991). Flusser had a kind of ambiguous relation to the idea of immateriality. In 1985, under the impression of the famous exhibition in the Paris Centre Pompidou, *Les Immatériaux* (the "immaterial" or "the non-material"), by Jean-François Lyotard, Flusser adopted the idea of a liquefaction of the material part of information, called zero dimensionality in his scheme of abstraction. But in *Form and Material* he begins with the remark that "a lot of nonsense" is being spoken about 'immaterial culture', which is why he wants to clear away the distorted concept of 'immaterial' in this article (p. 22). The word *materia* is a translation of the Greek *hyle*, originally meaning "wood", in Latin, and *hyle* is the opposite of form, *morphe*. So the opposition *hyle/morphe* is equivalent to "matter"/"form", where matter is "stuff", in the sense of the "material world", the material world being stuffed into forms (p. 22). This represents the classical Greek philosophy of Plato and Aristotle, a constant in flusserian thought. After some philosophical detours (like the idea of materialism, that matter (stuff) is reality), nowadays, "under pressure of information technology, we are returning to the original concept of 'matter' as a temporary filling of forms" (p. 23).

When talking about "immaterial culture", what is meant is "a culture in which information is entered into the electromagnetic field and transmitted there" (p. 24). But here, according to Flusser,

are two misunderstandings, one about "the term *immaterial* (instead of *high-energy*)" and the other about the concept of information. The opposite of "material" is not "immaterial", but "form".
"If 'form' is the opposite of 'matter', then no design exists that could be called 'material'. It is always in-forming. […] Design, like all cultural expressions, illustrates that matter does not appear (is not apparent) except insofar as one in-forms it, and that, once in-formed, it starts to appear (become a phenomenon). Thus, matter in design, as everywhere in culture, is the way in which forms appear" (p. 26).

On the other hand, speaking of design using the dichotomy material/immaterial is not completely beside the point, as "(t)here are in fact two different ways of seeing and thinking: the material and the formal" (p. 26). Whereas the Baroque period was material, ours is more formal, and thus "the history of painting, for example, can be seen as a process in the course of which formal seeing (with some set-backs of course) takes on a leading role over material seeing" (p. 26).[5] Material seeing results in representations (like animal paintings on cave walls), the formal one in models. But the point in this development is formalization and not immaterialization, as shown in the example of Cézanne and carried to the extreme in Cubism, which is why one "can therefore say that this sort of painting that, moving [...] between material and form, between the material and the formal aspect of phenomena, it approaches that which is referred to, incorrectly, as the 'immaterial'" (p. 27).

All this, however, is just a lead-up to so-called 'artificial (synthetic) images', in German "synthetische Bilder", images that display algorithms (p. 27). "Such artificial images can be referred to (mistakenly) as 'immaterial', not because they show up in the electromagnetic field but because they display material-free, empty forms" (p. 27). When in the past, the matter was "formalizing a world taken for granted", now it is "realizing the forms designed to produce alternative worlds. That means an 'immaterial culture', though it should actually be called a 'materializing culture'" (p. 28). At issue here "is the concept of in-formation", which means "imposing forms on materials" (p. 28). This leaves no room for anything such as the 'immaterial'. "For the 'immaterial' or, to be more precise, the form is that which makes material appear in the first place. The appearance of the material is form" (p. 29). And as a materializing culture this is a culture depending on design. In this way, Flusser, once again, brings together his reflections on the new possibilities of computational processing with traditional concepts of philosophy. It is worth noting that in this article he also attributes the achievement of artificial images not to the revolution in information technology (as he

5 In this phrase, the English translation in Pawley (1999, p. 26) is wrong, confunding material and formal seeing. See the German version in Wurm (1993a, p. 110).

does many times, indeed), but to the history and development of painting.

"The Submarine", the second of the two first essays in Wurm´s edition, belongs to the series of Flusser's philosophical fiction (see also Flusser, 1998a, and his *Vampyroteuthis infernalis,* Flusser, 1987b), a narrative and literary form treating philosophical issues, in which we encounter Flusser as a sci-fi writer and master of irony. It tells, from a futuristic perspective, the history of a submarine that was designed and built in the 20th century to save the world by installing a human (and humanistic) world government, but that was destroyed by the human beings, because they were unable to rid themselves of the evils of the world and the suffering of mankind. Flusser saw himself in the humanistic tradition of Erasmus of Rotterdam and thereby of an ironic philosopher of the Enlightenment (Flusser, 2002, p. 62).

These, then, are the nineteen articles we find both in Wurm's and in Pawley's collection on Flusser's theory of design, and therefore we can consider them *prima facie,* the essential ones for the topic.

2.2

Pawley's book contains all the articles of Wurm's, except for two: "Brasilia" and "City Maps", which are included in Wurm, but not Pawley. Urbanism, we understand, therefore is not considered a part of design here. This presumably is also the reason why the article "*Städte entwerfen*" [Designing Cities], which appeares in Flusser's *Writings* (2002, p. 172-180), was not included by either Pawley or by Wurm, even though the word design is used here explicitly. On the other hand, we have five articles in Pawley's book we do not have in Wurm's: "The Non-Thing 1" and "The Non-Thing 2", "Carpets", "Pots" and "Wheels", all taken from the book *Dinge und Undinge* [Things and Non-Things].

The two articles that Wurm has in his collection and that Pawley did not include in his —and we can presume, as Wurm's is one of his two sources, rejected them for some reason—were written by Flusser in 1970, some 20 years earlier, before those explicitly on design and published as newspaper articles: "Brasília", the first, in the German Frankfurter Allgemeine Zeitung, on Jan. 3, 1970, and the second, "Projetos Superpostos", translated to German as "Stadtpläne" [City maps], also published in Portuguese in 1970, in the Brazilian *Folha de São Paulo*. Both treat the urban project of Brasília, the new capital of Brazil that had been inaugurated in 1960, and belong to a series of publications

Flusser made on this topic (apart from Brasília also on other cities like São Paulo and Ouro Preto, in Brazil, in addition to San Gimigniano, Rome and others, some of them unpublished manuscripts). In the beginning, Flusser was enthusiastic about the project of Brasília, but later rejected it, an attitude that can be considered representative of the general reception of this project: when it was built, Brasília was celebrated as a model of architectural modernism, whereas even one of its architects, Oscar Niemeyer, in 2001 considered it an unsuccessful experiment. Flusser does not only write on the cities mentioned, but also very often draws on the history of first settlements that were transformed into the city — polis — in Greek antiquity and structured by three basic elements, then moves to Italian medieval towns with a similar structure, to point out the change in the contemporary structure of private and public, and moving on to future telematic cities with a totally different structure. Obviously Wurm considers it worthwhile to include at least two articles of these reflections on culture and urbanism, whereas Pawley thinks differently.

Brasília is, like Canberra, Washington D.C., or Ottawa, a planned (designed) city, and the concept underlying this plan is treated in Flusser's article *Brasília*. The planning aspect is even more explicit in the second article, *City maps* (*Stadtpläne*), as the city, finally completed, is the implementation of a prior existing plan, and with this understanding belongs to the field of design. In the case of Brasília, ideas about the future of the Brazilian nation and its inhabitants, the "new man", is part of the project, and this again implies a series of political, philosophical and other aspects, addressed by Flusser, so that the thematic range is long and way beyond design aspects *sensu stricto*. Perhaps this is the reason why some – like Wurm – include this in their concept of design and others – like Pawley – do not. Relevant in this context is a series of flusserian articles, like *Designing Cities,* not included neither by Wurm or Pawley, published in Flusser's *Writings* (2002, p. 172-180), and written in 1988 as a chapter of the book *From Subject to Project* (see below).

The five articles contained in Pawley's collection, which are not found in Wurm's, are *The Non-Thing 1*, *The Non-Thing 2*, *Carpets*, *Pots*, and *Wheels*. All the articles in Pawley, as he states, which are identical to the selection of Wurm, were actually taken from Wurm's edition. However, these five were taken from the book *Dinge und Undinge. Phänomenologische Skizzen* [Things and non-things: phenomenological sketches] (1993b). This again is a German version of a project, which had already been concluded in 1971, but was not published in Brazil under the title "Coisas que me cercam" [Things that surround me]. The book *Dinge und Undinge – Things and Non-Things* contains sixteen chapters altogether, from which Pawley has selected the five. Even if they were the most emblematic, the others could, and in fact also should be taken into consideration, as they were united by the

author himself. Apart from the non-things, carpets, pots and wheels, and the introductory chapter, also titled *Things that surround me*, Flusser dedicates proper chapters to bottles, walls, streetlights, gardens, chess, sticks, the bed, the atlas, the lever, the dipper and soup, obviously a much broader scope of objects of use than the ones selected by Pawley (1993b, p. 11-139).

"The Non-Thing 1": Until recently, our environment (*Umwelt*) consisted of things that belonged either to nature (natural things) or culture (artificial things) (p. 85). But this has changed: now non-things flood our environment, "immaterial information" (p. 86). Information of course is not new, as the "word *in-formation*", that "has to do with 'form in' things", indicates (p. 86). But now the "material basis of new-style information is negligible", its materiality "can be discounted" (p. 87). We have become less interested in things and more in information, and the structure of society and environment change accordingly. "All things will lose their value, and all values will be transformed in information. 'Revaluation of all values'" (p. 88). Nietzsche, once again. The impact of this informational revolution, which produces a new human being "who is not concerned with things, but with information, symbols, codes and models" (p. 88) can only be compared to that of the first Industrial Revolution. Similarly, much like a farmer in 1750 AD, who had more in common with a farmer in 1750 BC than with his son living in 1780 AD, we – the elder – have more in common with people from the age of the French Revolution than with our children, if they are *digital natives* (although this expression is not used by Flusser, this is what he means). They don't use their hands anymore, only their finger tips, as they "tap on keys so as to play with symbols" (p. 89). And this "advent of the non-thing in our environment is a radical change," but one that "will not be able to alter the basic mode of existence, being unto death" (p. 89). This last expression, "being unto death", in German "das Sein zum Tod", once again is a reference to Heidegger, one of Flusser's strongest influences.

In "The Non-Thing 2", Flusser turns to the fundamental importance of the hand within the anthropology of man. Ever since human beings have been human beings, they handled their environment using their hands. By this operation, grasping, possessing and transforming them, things as such come to be, and this brings forth two worlds: "the world of 'nature' (of things that are to hand [*vorhanden*, in German] and to be grasped) and the world of 'culture' (that of handy [*zuhanden*, in German], in-formed things)" (p. 90). Flusser, once again, refers to Heidegger; in German, the dichotomy *vorhanden* – *zuhanden* is easily detectable as a reference to Heidegger's "Vorhandensein" and "Zuhandensein". Therefore, until recently it seemed "that the history of humankind is the process whereby the hand gradually transforms nature into culture" (p. 90).

However, this opinion has been overthrown by the development of non-things like a computer memory or electronic images, which "are non-things simply because they cannot be held in the hand" (p. 91). They convey information, and this cannot be grasped by the hand, the hand having become dysfunctional. Fingertips have become the essential part, which is why they "have become the most important organs of the body" (p. 92). For pressing keys – and process information – only fingertips are needed. This connects everybody, with no exception, to programs, and so the society of the future will be one "without things" and a "classless […] society of programmers who are programmed. […] Programmed totalitarianism" (p. 93). This makes it necessary to more closely analyze the term 'program', the "key term of today and tomorrow" (p. 94). Now we understand why Flusser chose the numbers 1 and 2 in the title Non-Things: they are two ways of treating the same idea. Additionally, of such fundamental importance that they are also relevant for design, which is always a design of things.

"Carpets" belong to the category of everyday objects of use that Flusser analyses as cultural objects, last but not least in order to understand the nature of human beings, a traditional philosophical question ("What is man?", of Immanuel Kant, one of Flusser's references). Culture is the key to the answer: "Nothing human is natural. That which is natural about us is unhuman" (p. 95). And carpets, as analyzed in the eponymic article, are an example. Historically, their origins lie in Egypt, China, India and Persia, a perspective that Flusser frequently assumes in order to underline the origins of our present culture (he sees and defines himself as Mediterranean). Their process of production is a part of the cultural process and so its analysis also makes this transparent. Knotting carpets is not spontaneous, it requires and follows a plan, which is "why the carpet-maker has recourse to designs that have been worked out exactly in advance and that are fully aware of the fact that they are only pretexts" (p. 97). The carpet weaver "engages with the material by following a design that is prescribed for him, making this design so as to cover up the material", and in this way "aims at an appearance" (p. 97). He conceals "the truth" of his efforts "by means of beauty", i.e. the final result of the piece he brings forth.

"Pots", among the oldest of human objects of use, in a certain perspective resemble "those forms that the Ancients referred to as 'immutable Ideas'" (p. 99), and with "the Ancients" Flusser refers to Plato, the author cited more often than any other, and his theory of forms. "Pots are considered to be empty forms", and Flusser, in this article attempts to look at "'pure form' phenomenologically" (p. 99). Filling a pot with water means giving form to the water, which again implies an informational structure, which is why the pot is an epistemological tool. Similarly, Flusser's

example for the difficulties arising from this, like the idea of a nation, in his case de Gaulle's "certaine idée de la France", that has to be filled up with elements, leading to unsettled questions concerning also science in general. If we look at the world from this "potter's point of view", we can see behind its phenomena the forms that "in-form" them (p. 101). "Behind the apple the sphere, behind the tree-trunk the cylinder, […] and, recently, behind apparently formless, chaotic phenomena (such as clouds and rocks) so-called fractal forms" (p. 101). Thus, we have nowadays "developed a new pottery technology, an electronic ceramics", that allows to "display empty, but coloured, so-called artificial images made of algorithms on computer-screens" (p. 102). This reveals "what pottery is all about", namely, "producing empty forms in order to in-form what is amorphous", which is exactly "what the Lord was doing on the first day of Creation" (p. 103). Hereby, Flusser returns to the initial phrase of the essay quoted from the Bible, "Like a potter's vessels shall the peoples be broken to pieces" (p. 99), which demonstrates once more Flusser's wide range thinking strategy, making use of all sources of human intellectual strivings form the Bible to philosophy and reflections on new media.

In "Wheels" Flusser proceeds similarly in presenting their history, starting with the sharp but concise remark that one of the most lasting consequences of Nazism "is the way in which the swastika has been turned into a kitsch object" (p. 117). The swastika's origin is the wheel of the sun, which is why this symbol is ubiquitous in so many archaic cultures, standing for the cycles and epicycles of day and night, summer and winter, birth, death and rebirth, etc. (p. 119). But then, all of a sudden, arose "the incredible idea of building a wheel that would turn in the opposite direction of the wheel of fate. A wheel that, if placed in the Euphrates, would turn the waters round so that they would not flow into the sea but into channels", which is, "from our point of view, a technological idea" (p. 119). Nevertheless, it seems that this period has come to an end, because the new technology dispenses of the wheel. In our "post-industrial situation" we can verify a "slow but irreversible disappearance of wheels", that "no longer tick away in electronic equipment […], and once biotechnology has taken over mechanics, the machines will no longer have wheels but fingers, legs and sexual organs" (p. 117). So it seems that the circle of the wheel is coming to an end.

These articles included in a selection on design go beyond the scope of design in a traditional sense, as they are taken from a book that intends to propose a kind of phenomenology of culture understood via its materiality of objects, objects of use produced by human beings in order to establish a cultural counterpart to the natural part of our Life-World (a term coined by Edmund Husserl and highly valued by Flusser (Flusser, 1987a), although not used in this context). This is also

the scope of a conference held in Weimar at the Bauhaus University in 1997, *Vilém Flusser: Design und die Philosophie der Lebensformen* [Vilém Flusser: Design and the Philosophy of Life Forms] (Flusser, 1998b).

3. Cardoso's Collection

Cardoso's book contains ten articles that were published both in Wurm's edition and in Pawley's, and three articles from the five that Pawley published, but Wurm did not. Additionally, he has six articles on the theory of communication taken from Flusser's *Writings*, edited by Andreas Ströhl (Flusser, 2002). As Cardoso's sources are, as he also states, the books of Wurm, Pawley and Ströhl (Cardoso in Flusser, 2007, p. 217-218), he does not offer any additional editorial achievement, but translates what had been selected by others into Portuguese. This is of course helpful but does not go beyond what the other editions already have contributed to our knowledge on Flusser's ideas of design.

4. Arch+

The special edition of *Arch+*, number 111, 1992, a magazine for architecture and urbanism, was dedicated to the recently deceased Vilém Flusser. Hithertoo unpublished is a long interview that the editor, Sabine Kraft, had made, together with Philipp Oswalt, with Vilém Flusser, titled *Virtual Spaces – Simultaneous Worlds* (1992, p. 33-52). This is the only new contribution on behalf of Flusser. All the other texts are republications, among these three that were published in Wurm's collection (*Bare Walls*; *Form and Material*; and *Shelters, Screens and Tents*). The interview is divided into eight chapters: cyberspace; ephemeral, dialogic architecture; life-space, outer space, quantum space; the "everlasting presence" *(nunc stans)*; moving between virtual worlds; telepresence; cerebralisation; designing relations. Regarding the last point, post-historical thinking is about relations, and architects, when designing buildings, should not focus on objects, but on relations (1992, p. 49-50). Relevant to design, to summarize, is the discussion of new computational information processing.

5. Designing Cities

Flusser's "Designing Cities", translated to English and published in his *Writings* (Flusser, 2002, p. 172-180), unites the aspects of design with architecture and city planning. Published here as a separate article, it is originally a book chapter of V*om Subjekt zum Projekt* [From subject to project]. In this posthumous publication, and unfinished final work, Flusser argues that the new cultural phase of man, postmodern digital society, changes the traditional relation between object and subject and allows the new possibility of a projecting subject, which explains the title *From Subject to Project*; the subject is no longer seen as indispensably attached to an object, but advances together with the development of technology and becomes projective. Apart from cities, a series of further basic elements of human culture are now becoming newly designed - the German verb used, *entwerfen*, its noun being *Entwurf*, translates in English to *design* - under the new conditions, each treated in a proper chapter: houses, families, bodies, sex, children, technology and labour ("*Städte entwerfen", "Häuser entwerfen*", etc.). Philosophically Flusser here refers to Heidegger, as Flusser himself testifies: "The concept of 'Entwurf' [outline, design, project] since Heidegger is used in a new sense. It means more or less the point from which on we decide to invert our being-thrown-into-the-world (unser Geworfensein in die Welt), to pro-ject ourselves." (Flusser, 1994, p. 25, our translation) Heidegger's concept of 'Entwurf' (see e.g. Heidegger, 2006, p. 235; p. 260), according to Flusser, only has to be adjusted to the new possibility of recoding numbers into concepts (Flusser, 1994, p. 25). This demonstrates how strongly Flusser was influenced in his design-theory (but of course not only here) by Heidegger. Moreover, it is Plato that speaks to us, because Heidegger undertakes an interpretation of Plato's theory of truth (*aletheia)*, and this heideggerian interpretation again is Flusser's source. This recourse of Flusser to Heidegger in this context is also pointed out by Siegfried Zielinski, the long-term director of the Vilém Flusser archive, in his essay *Entwerfen und Entbergen* (2010, p. 50-52), referring to Flusser addressing the subject in his *Kommunikologie weiter denken* (Flusser 2009, p. 180-181).

Whereas the term "*entwerfen*" corresponds to "to design", "entbergen" is used by Heidegger in his adaption of the Greek aletheia-concept of truth, and means something like "become uncovered" ("Entdecktheit", Heidegger 2006, p. 222). In other words, putting it more simply, grasping that which actually exists means to uncover phenomena in order to perceive its true structure. Designing things, therefore, means to structure them and thereby reveal their true "forms". This is a reception of Plato's theory of truth, based on ideas and forms. Thus, we are led into a highly complex

philosophical debate. Nevertheless, Flusser always comes back to these roots when he outlines the potential of man changing from a state of being subjected to becoming a designer of his objects of use, as the title indicates, *Vom Unterworfenen zum Entwerfer von Gewohntem* [From being subject to a designer of the habitual] (Flusser, 1989). Finally, it is clear that Flusser's theory of design is philosophically based upon the philosophies of Plato and Heidegger – Plato through the theory of forms and Heidegger through his theory of *aletheia*, the uncovering of truth.

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