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From function to meaning: In the long run everything is Design

There are not many disciplines, which are nowadays so intensively focussed like Architecture, Art and Design.¹ Architecture is today especially in Arabian and Asian countries a tool for demonstrating progress, high technology and image. Art today is one of the most expanding markets, with fetch high prices in an extreme speculative world. Investment is always looking for new products, and Art is highly appreciated because it gives value and transfers social status. Modern Art can catch the floating money of the young and successful urban people. Art is becoming a part of their lifestyle. And Design? All the media is overcrowded with contributions about Design, fancy products and stories about the designers who made them. Design is trendy, very often quite cheap but sometimes as expensive as Art. The actual trend is: "Design is the new Art".²

But looking back, we can see in the last decade, that Design is constantly moving into two very different directions: one is the more and scientific approach (this is obvious in more then 135 Ph.D. programs around the world), the other is the increasing orientation towards lifestyle or even "decorating life".

A very new term in Germany for good designed products is "stylish". It was first used in the FOCUS magazine on September 10, 2007 for the IAA – the International Automotive Fair at Frank-

¹ This essay is based on a lecture held at the CIFIAL Design Forum (Tektonica Fair) in Lissabon (May 22, 2008).

² SPIEGEL Special: Architektur und Design. Wie wir morgen leben werden, Nr. 4/2008.

furt am Main. And now “stylish” has enriched our language, because the advertising people like this term very much. The term “Styling” was invented in the USA and used especially in the 1950/60’s for automotive design, where the constant change of external forms neither changed the cars in their basic functionality nor in their meaning. Now this very superficial look on design comes back, which might have indeed some good reasons which will be discussed later.

1. Introduction

Looking back to the 20th century we can see a long tradition of the functionalistic approach, but in the beginning of the 1980’s, the postmodern movement³ became very important for the discourse about design, because the paradigm has changed completely. In one sentence – the idea of design has changed from function to meaning.

The Carlton bookshelf e.g. by Ettore Sottsass (one of the most famous Memphis products from 1981) was the first one, designed not primarily to store books, but to visualize, that you could store some books in it. But it really looks much better without any books. Therefore nearly no pictures are published with books in it – because they would distract the surprising and beautiful appearance of the product. What are the reasons for this dramatic change in Design and what is behind these activities? I want to start with a short review how Design started, what have been the principle ideas and what the situation today is and might be in the future.

2. Some History

Beyond all international disputes about Design itself, there is today a widely known consent about what the History and Theory of De-

³ E.g.: Schmidt, Burghart: Postmoderne – Strategien des Vergessens. Darmstadt und Neuwied 1986. Und: Huyssen, Andreas/Scherpe, Klaus R. (Hrsg.): Postmoderne – Zeichen eines kulturellen Wandels. Reinbek bei Hamburg 1986.

sign⁴ is. In the most books on design history the beginning of Design is situated at the end of the 19th century, with the arts and crafts movement in England, later then in Germany, Scandinavia, Italy etc. But in my opinion this is not really correct⁵.

2.1 About 2000 years ago: Marcus Vitruvius Pollio

Marcus Vitruvius Pollio (called Vitruv) was a roman artist, architect and engineer (who lived from 80 until 10 before Christ). He was a very universal person, later he was compared with Leonardo da Vinci. He has designed some building in the ancient Rome but he really became popular with his “*10 books about architecture*”, which are until today the basic works for a functional approach in architecture and – in a modern sense also for design. There are about 80 versions in many different languages. Vitruv wrote, that the architect (and in a modern sense the designer) needs practical but also theoretical talents. With this description we are very close to the actual debate about Design.

In his third book Vitruv mentioned three conditions which buildings (and in this sense also products) have to meet:

- firmitas (stability),
- utilitas (the functional and practical aspects)
- and venustas (aesthetics and beauty)

Vitruv also gave the statement, that architecture is the highest level of free and applied art: “*summum templum architecturale*”, which was valid until the 20th century.

It is also very important that Vitruv mentioned the “*venustas*” which means the aesthetics of buildings – or in a modern sense the products. Since the 1980’s there is a strong influence of art into design (and also back), especially in Germany we are involved into an

⁴ Walker, John A.: Design history and the history of design, London 1989 (Pluto Press). Dt.: Designgeschichte: Perspektiven einer wissenschaftlichen Disziplin, München 1992.

⁵ Bürdek, Bernhard E.: Design. Geschichte, Theorie und Praxis der Produktgestaltung. Basel/Boston Berlin 2005. Engl.: Design. History, Theory and Practice of Product Design, 2005. Portugiesisch (Sao Paolo 2006), chinesisich (Beijing 2007), ital. (in Vorbereitung).

intensive debate on this topic, but in my opinion design has nothing to do with art, but very much with aesthetics. Recently I demonstrated⁶, that the error of the 20th century was the interaction of art, technology and design. Because what was adapted in architecture and design from the arts have only been the aesthetical aspects – nothing more. Art is a personal statement, but architecture and design are always solutions for society.

Andreas Dorschel⁷ – in his fundamental book on “Gestaltung” and aesthetics although reconstructed the categories of Vitruv: the practical (functional), technical and aesthetical aspects of “Gestaltung” have been always seen as a unity, but only in the scientific discourse they have been discussed separately.

An even Max Bill⁸, a student at the famous Bauhaus in the 1920's, who became later the architect of the Ulm Design School building and later its first director, made a clear distinction between art and the aesthetical functions of objects. The aesthetical functions of products are beyond their practical meaning mainly psychological ones. They are forming our aesthetical consciousness. Therefore - with the term “Gestaltung” Max Bill coined a comprehensive understanding of objects, where as “Formgebung” is just the external appearance of an object, similar to the term “styling”. He was very much interested in the debate about these concepts and as a result, he was responsible that at a design school like Ulm, there was no art education, because “Gestaltung” is used for the objects of product or graphic design.

The three categories of Vitruv (firmitas, utilitas and venustas) are still the main basics of functionalism, but they are showing us also the limits of functionalism. Especially in Germany there was a very rigid discourse about it in the 1960's and 1970's, because the term “function” was always used in a practical or even technical sense. The BRAUN Company was the model for many other companies, not only in Germany.

⁶ Bürdek, Bernhard E.: Design in der Krise. In: Hochparterre. Zeitschrift für Architektur und Design, Nr. 5, Mai 2008.

⁷ Dorschel, Andreas: Gestaltung – Zur Ästhetik des Brauchbaren. Heidelberg 2003.

⁸ Bill, Max: funktion und funktionalismus. Schriften: 1945–1988. Ed. by Jacob Bill. Bern und Sulgen 2008.

In Italy on the other hand there was a much more open discussion about this. Ettore Sottsass for example admired the work of Dieter Rams – but his work was completely divided: for Olivetti he worked in the sense of “Bel Design”, and in the same time he played a very active role in the Counter Design movement, which led finally to the Memphis Collection in 1981, which was the best visualization of the postmodern movement at all.

2.2 *Leonardo da Vinci*

Leonardo da Vinci – not only for me – was the first “designer” in the world. For him, knowledge was based on visual perception and he developed a congenial relation between art and science, which is still a topic today, for us as designers but also for the questions of a Science of Design. But Leonardo not only was an artist or scientist, he also designed e.g.:

- buildings, plans for complete cities, palaces and gardens etc.
- he invented and designed several machines and tools, parachutes etc.
- he also designed transportation systems like cranes, vehicles similar to our bicycles, military devices etc.

Therefore, with Leonardo da Vinci, the idea that designers are inventors of technical systems, began its long career, and especially the European tradition of the functional approach in design was based on his ideas, principles and projects.

But the “Leonardo” model is still in the mind of the designers: many of them feel as the inventors of things, which was in the 20th century relevant, but within the shift in technology from mechanics, via electrics & electronics to the biological revolution, this approach became obsolete. It is interesting to see, that this movement fell together with the “linguistic turn” which changed the role of design theory completely. The “Leonardo” model was constitutive for the design in the 19th and 20th century.

2.3 *Giorgio Vasari*

Giorgio Vasari⁹, also an important Italian painter, master builder and literary author (1511–1574), made a clear distinction between two forms of „*disegno*“:

- the “*disegno interno*”, that means the concept (the sketch, the draft or the plan) and
- the “*disegno esterno*”, that means the completed works (like drawings, paintings or sculptures).

This differentiation is still important, because from a theoretical or even scientific point of view, we also have to discuss:

- the “physical form” of a product and
- the “concept”, which is the idea of a product, the value or even the meaning.

2.4 *About the roots of functionalism*

2.4.1 *The Bauhaus*

This rationalistic approach was first established in the German „Bauhaus“, from 1919 to 1925 at Weimar, later (from 1926 to 1932) at Dessau and finally until 1933 at Berlin. The Bauhaus had two central aims:

- to achieve a new aesthetic synthesis by integrating all the artistic genres and craft trades under the primacy of architecture and
- to achieve a social synthesis by aligning aesthetic production with the needs of the general population.

The German architect Walter Gropius – who was the founder and first director of the Bauhaus – was guided by the idea, that the combination of art and technology should lead to a new and modern unity – and this was the foundation of Design. Technology might not need art, but art certainly needed technology, this was the motto

⁹ Vasari, Giorgio: Einführung in die Künste der Architektur, Bildhauerei und Malerei. Berlin 2006.

of the early 1920's. This idea was associated with a fundamental social objective, namely to anchor art in society.

Looking back to Gropius, we see the big misunderstanding I mentioned before, art and aesthetics are not the same, design is not applied art, but design has to do a lot with people, technology, innovation and aesthetics.

For the development of design it is important to mention, that Walter Gropius invented the methods of "*eidetic inquiry*", "*functional analysis*" and a nascent "*science of form*" which was to be used to elucidate the objective conditions for design. The long tradition of "eidetic marks" which was later developed at the Offenbach Academy of Art, Design & Media in the 1970/80's stands in this tradition of the Bauhaus, denoting as it does that every product has typical marks, or visualizations of practical functions, that point to the specifics of a product class.

The German Bauhaus was the first design institution, which established a "scientific approach" to design. This was mainly a "visual research" because the people in the 1920's tried to find out the principles of perception (the gestalt psychology was founded in these years also), the problems of two- and three-dimensional forms, colors, textures etc. have been in the middle of their research. This was hermeneutic research, mainly based on principles of art and applied with new basic technologies of the time.

But we have also to mention, that the Design of the Bauhaus was not very successful when it was developed in the 1920's. The products have been far away from the common taste and they have been too expensive for the general public. So it took about 4 to 5 decades before the Bauhaus Design became accepted in the society. One reason was, that especially in Italy people did a lot of copies of the famous Bauhaus products and began to sell them very cheap. But the Bauhaus furniture also became something like a "Life-Style"¹⁰, that means the symbolic values of the products became more important than the functional.

¹⁰ Bittner, Regina (Ed.): *Baushausstil. Zwischen International Style und Lifestyle*, Berlin 2003.

2.4.2 *The Ulm Design School*

After the Second World War, the Ulm Design School (1953–1968) became the most influential institution for the design education in Europe, with also very strong effects to Latin America, which was very much influenced by this rational way of thinking and designing. The Ulm Design School was in one sense the continuation of the “Cartesian” thinking. In the 1960’s mainly Tomás Maldonado (an Argentinean artist, who became Director after Max Bill) integrated a lot of new scientific disciplines, e. g. ergonomics, mathematical techniques, economics, physics, politics, semiotics, sociology, theory of science, perception theory and so on into the curriculum.

People like Bruce Archer, Horst Rittel and Gui Bonsiepe also established what we call Design-Methodology¹¹. The main roots for this methodological approach came from mechanical engineering and the idea was, that designer had to learn their ways of thinking and problem solving. Herbert A. Simon e.g. became the pope for this “scientific approach”, his System Design Theory¹² is still virulent but I must confess, that this is now – 40 years after he wrote it – not so much up to date, but still a resource for some designers. The “systemic” look to products and processes is becoming more and more important: *“Given the ever more complex networking of sciences with one another it is essential for the designer to create well-founded insights into their structures, methods and results. Herbert Simon’s considerations from the 1960s are experiencing a comeback at present which appears to be thoroughly appropriate given that the complexity of technical systems (products) wants to be controlled, reduced and designed.”*¹³

One of the most important aspects in the development of Design was, that it became obvious to use scientific methods for it, and

¹¹ E. g.: Bürdek, Bernhard E.: Design-Theorie. Methodische und systematische Verfahren im Industrial Design. Ulm 1971; ital.: Teoria del design. Procedimenti di problem-solving. Metodi di pianificazione. Processi di strutturazione. Milano 1977.

¹² Simon, Herbert A.: The Sciences of the Artificial, Cambridge/Mass. 1969.

¹³ Bürdek, Bernhard E.: Im Dickicht der Diskurse – The Images of Design. In: form 221, Juli/August 2008.

Martin Krampen¹⁴, a former Professor at the HfG Ulm said: *“It was the abstention from the useless, a continuous concept of rationalism, which came from economy. After the Second World War new production lines have been installed, and the products had nothing to do with decoration. It was a question of efficiency to go ahead. The design education at the hfg ulm was dedicated to these aspects. Later on, it became obvious that this form of aesthetical purism could be used only for some parts of industry, and these products have been in the focus of the hfg ulm. Nobody could imagine e.g. a microscope ornamented with colored flowers.”*

But this could raise an interesting question for today: European societies are polarizing more and more: richer and poorer people, more elderly and few younger people. This could directly lead to the question of aesthetics in Design.

As one of the last students at the Ulm Design School I must also say, that in this institution there was at least very little emphasis on aesthetically questions. The gray square and the gray cube became the symbols of the functionalistic design and it is obvious that there is so less influence to Asian countries, because they have a totally different heritage. The only actual example which I really know – and which I appreciate – is the tradition of the Japanese “Muji” products.

But it is also important to mention, that the first steps toward a „semiotic based“ theory of design have been undertaken in the early 1960’s at the Ulm Design School¹⁵ by Max Bense, Tomás Maldonado, Gui Bonsiepe and Klaus Krippendorff. At the occasion of the 50th anniversary of this school, there was a catalogue, reviewing the ideas of the HfG Ulm into the actual debates about design¹⁶. Gui Bonsiepe¹⁷ reminded, that semiotics has been a foundational discipline for design education and even initiated studies in this area, but he would have opposed over-emphasizing this dimension or even granting is autonomy with regard to design.

¹⁴ Interview with Martin Krampen, in: Kai Buchholz & Justus Theinert, Designlehren. Wege deutscher Gestaltungs- und Designausbildung. Stuttgart 2008, p. 157.

¹⁵ Bürdek, Bernhard E.: Design (2005).

¹⁶ Ulmer Museum/HfG Archiv, Dagmar Rinker, Marcela Quijano, Brigitte Reinhardt (ed.): ulmer modelle – modelle nach ulm, hochschule für gestaltung 1953–1968, ulm: method and design, ulm school of design 1953–1968.

¹⁷ Bonsiepe, Gui: Zur Aktualität der HfG Ulm. (The Relevance of the Ulm Dschool of Design Today). In: ulmer modelle – modelle nach ulm, a. a. O.

2.4.3 *Some Consequences of Functionalism*

The rationalistic approach to design problems became constitutive for many countries in Europe like Germany, England but also for the Scandinavian countries like Denmark, Finland or Sweden. This started in the 1960's, but things have changed in the last decade due to the big influences of globalization and not at least to the big influences of Asian countries to the design movement.

Looking to Design Research today (and in the future) concerning the people we are talking about, we can just have a short view on Europe. More than 700 Million people are living in about 35 countries, with more than 20 different languages. This means, we have a lot of differences between the countries and their cultures. These different identities are sometimes obvious, sometimes not. In the northern parts you will find still the above mentioned tradition of "functionalism" whereas in the southern countries (like Italy, Spain, Portugal, Greece) – not at least to the completely different climates – people are more orientated to a greatest of ease, the colors they are having are brighter, design is not so serious like in the north. In the moment the European Union is growing, not only as an answer to the globalization. This makes it very obvious, that we can't longer trust the narrow functional approach of the 1960's or 1970's.

3. The Functional Approach today

Design deals with products: with hardware, with software (interaction and interfaces) and with services. We have learned, that products have different functions, they have e.g.:

- technical functions
- social functions
- cultural functions
- economical and
- ecological functions.

The very actual debate about the world climate and the warming up of the earth is just one aspect of the ecological functions. But we also learned more and more, that products have semantic functions –

with other words: they have meanings and they are transporting meaning into society.

4. The Semiotic Approach

The ongoing debate about the Theory and Science of Design is not without influence on the Design Education. During the ICSID Congress in Korea (Seoul 2001) Nigel Cross drew an interesting conclusion that aptly characterizes the development of design. He claimed that looking back into design history; paradigmatic changes can be detected in forty-year-cycles:

- In the 1920's scientific findings were integrated into design training for the first time. This was the above mentioned Bauhaus in Germany.
- In the 1960's were the heyday of design methodology (England, United States, but also in the mentioned Ulm Design School), and this was the real beginning of the era of scientific design. It is important to mention again, that the idea was to integrate as much as possible scientific knowledge from other disciplines into design.
- In the 2000's the emphasis has been on enhancing design profiles as an independent discipline.

During the first “*Doctoral Design Conference*” at Columbus/Ohio (1998) Alain Findeli (University of Montreal/University of Nîmes) mentioned, that Design is now at the same eye level like other disciplines. This means that there is now enough knowledge which can be transferred from Design to other disciplines. Alain Findeli said, e.g. engineering, marketing, the cultural sciences or even pedagogic can use design knowledge. That was absolutely new and for the design community a very interesting option.

I am characterizing the topic of “independent discipline” (Nigel Cross) as the “disciplinary approach” of design or even as the “disciplinary design theory”. What does this mean? Industry for example more and more needs neither specialists (people who know a lot about a little), nor generalists (people who know a little about a lot) but rather integralists (people who have a good overview of various disciplines with deeper knowledge in at least one area). Many often

Designers claim to work interdisciplinary, multi- or even cross-disciplinary. No argue against it, but what is their specific role or even input into these processes?

4.1 The linguistic turn

Before going into details, it seems necessary to discuss some philosophical changes in the 20th century. The so-called “linguistic turn” was a radical change, because philosophy left the debate about subject and object and concentrated to the problem, that the understanding of world (and their problems) is mainly done by language. Therefore it seemed necessary to research language itself and to find out their principles. The French Ferdinand de Saussure demonstrated in his “Course de linguistic générale” (1916), that terms and their meanings are not naturally given, but they are based on convention. He became the founder of the structuralistic science of language, which was dominating the complete 20th century. We will see later, how this “convention” became important to product language.

Jan Mukařovský, a Czech linguist (1891–1975) adopted the work auf Ferdinand de Saussure and formulated a new theory for understanding art and design. Beyond aesthetical problems he found out, that social dimensions must be discussed more detailed. Mukařovský replaced the term of “beauty” by “function”, and he developed so-called “typology of functions”, which became later an important fundament for the product language movement at the Offenbach Design School.

French structuralistic research in the 1960’s and 1970’s (Roland Barthes, Claude Levi-Strauss) and later Jean Baudrillard and Paul Virilio, but also the Italian Umberto Eco became more or less the intellectual pillars. Roland Barthes analysis e. g. of the legendary Citroen DS was one of the first fundamental semantic contribution: cars are much more then transportation tools. Roland Barthes wrote that the DS is similar to the great cathedrals of the middle age. Speed is visualized not aggressive or even sportive, speed moved from a heroic to a classical form. The windcreens are not just windows, but they are big spaces of air and emptiness. The dashboard is not like a classical car, but much more then a kitchen equipment or like a control panel in some production industry. The association is more com-

fort then performance. The “Desée” was something like a turning point in the mythology of the history of the automobile.

4.2 Product language

When we¹⁸ started in the mid 1970’s to discuss a new approach to design theory and design practice, we began to ask some questions of science first. A very basic way of developing a discipline is to ask about:

- the targets,
- the objects,
- and the methods.

Talking about design,

- the target is to develop an independent discipline with own principles, rules, language etc.,
- the object is the relation between a user and a product and
- the methods are coming more from human sciences – and less from natural sciences like engineering etc.

In the meanwhile I have learnt the problems of many design faculties, which are part of technical universities: for them the principles of engineering e.g. are the dominant ones and their research is based on these principles. Therefore many people are presenting methodological contributions about processes etc., but they can’t tell anything about the soft factors of the products.

When we decided to develop a new theory of design, we concentrated very much on semiotics and communication theory. We still believe that design is mainly a product of and for communication and not only a product with functions or even meanings. Therefore it is obvious, which kind of theory and which kind of research we really need.

The concept of “Product Language” is based on a very elementary aspect, which was introduced into design by Christopher Alex-

¹⁸ Bürdek, Bernhard E.: Design. Geschichte, Theorie und Praxis der Produktgestaltung. Köln 1991 (1994²).

ander¹⁹ in his famous book: “*Notes on the Synthesis of Form*”, where he mentioned, that there is a strong relation between the form and the context. This relation is a social one, a psychological one, but mainly it is a relation of communication and meaning.

More the 25 years ago, there was some research by Mihay Csikszentmihalyi and Eugene Rochberg-Halton²⁰, in which they mentioned that people “*have the interesting capability to produce and to use products. ... The things with which people are interacting are not only instruments for survival. Physical objects are representing targets, they demonstrate personal capabilities and they are forming the identity of the user. Man is not only ‘Homo sapiens’, or ‘Homo ludens’, he is also ‘Homo faber’, a designer and user of objects, and his personality is on a long run a reflection of the things, he is using.*” Therefore all the objects are forming the producer and the user.

4.2.1 Disciplinary categories

One of the most important contributions to design theory was, that we developed disciplinary categories, which are very useful for the description but also for the generation of products. These three categories, which we are calling a little bit ironically the “Offenbach Trinity” are:

- the principles of formal design, which we derived from Gestalt Theory and Perception Theory mainly invented in the 1930’s by Christian von Ehrenfels, Karl Bühler, Max Wertheimer, Wolfgang Köhler, Kurt Koffka and Wolfgang Metzger;
- the marking functions, which go back to Walter Gropius and the Ulm Design School (Hans Gugelot and Richard Fischer);
- the symbolic functions, which is based on the Susanne Langers²¹ (an American philosopher 1895–1985) distinction between marks and symbols.

¹⁹ Alexander, Christopher: *Notes on the Synthesis of Form*. Cambridge/Mass. 1964.

²⁰ Csikszentmihalyi, Mihay and Eugene Rochberg-Halton: *The Meaning of things. Domestic Symbols and the Self*. Cambridge/Mass. 1981.

²¹ Langer, Susanne: *Philosophy in a New Key*. Cambridge/Mass. 1942.

Today there are a lot of contributions to the symbolic theory applied in product design and in many fields we can say, that products are mainly symbols without any practical functions²². These categories are very close to the original semiotic categories like syntax, pragmatic and semantics.

In these fields we really did a lot of research concerning classic product design, we transferred this knowledge to Interface/Interaction design and now in the area of strategic design we are using it for identity and branding problems, therefore we hope that we are still up to date even after 30 years of investigations. But in these days I am sure, that we are on the right way. Since 2005 there is the DESFORM Movement, concentrating on Product Semantics and Product Language, they made now three Conferences: 2005 in Newcastle, 2006 in Eindhoven²³, 2007 in Newcastle²⁴, and in 2008 the next one will take place at the Academy of Art and Design at Offenbach.²⁵

At the DESFORM workshop 2006 at Eindhoven James Moultrie²⁶, who is teaching at Cambridge University, Great Britain, said: "Attention has been focused on the complexities of the consumer's cognitive response, or the judgments that the consumer makes about the product based on the information perceived by the senses. These judgments can be grouped into three classifications:

- *Aesthetic impressions: or the sensations that results from the perception of attractiveness (or unattractiveness) as a result of viewing a product.*
- *Semantic interpretations: what a product is seen to say about its function, mode-of-use and qualities.*
- *Symbolic association: the perception of what a product says about its owner or user, the personal and social significance attached to the design."*

²² Bürdek, Bernhard E.: Design 1991 (1994²), a. a. O.

²³ <www.desform2006.id.tue.nl/>.

²⁴ <www.cfdr.co.uk/desform07/index.htm>.

²⁵ <www.desform.de>.

²⁶ Moultrie, James: Seeing things: consumer response to product appearance, Proceedings DESFORM 2006 Conference. Eindhoven/Netherland, p. 5.

4.2.2 Product semantics

As mentioned before, the Ulm Design School (1955–1968) was the most dominating institution in Germany in the field of design theory and design methodology – with many influences around the world. The rational (functional) approach to design was developed here, but it is very obvious, that Ulm has an unbalanced position.

Klaus Krippendorff²⁷, one of the first students at the Ulm Design School recently came up with a very important book: “*The Semantic Turn*”. He is a Professor for Cybernetics, Language and Culture at the Annenberg School for Communication at the University of Pennsylvania/USA and an important pioneer of an absolute modern design theory and design science.

Krippendorff mentioned, that “*Meaning had no currency at Ulm*”, this is very obvious because the Ulm Design School was operating long before the post-modern movement. In his book, it is important, that he claims the “*linguistic turn*” as a main basis for design. The use of language applied to technology is a new paradigm: to describe forms, materials, functions and problems, to describe differences of them and at least to qualify the designers to communicate in the process of designing – this is the real progress in design theory in the late 20th century.

And products are only becoming important when they are telling stories to the users. A good example is the “New Mini” by BMW. The former Mini was in the 1960’s and 1970’s a basic vehicle in Great Britain and it became a cult product due to the many stories that have been told him. When BMW bought the brand, they understood to pick up this history (with an excellent retro design) and transferred this to a completely new target group: the young urban people – beautiful, successful and rich, which is now called the “Mini community”.

Language has different dimensions and all of them are very important for design science and design practice because language:

- is a system of signs and symbols,
- is a medium of individual expression,

²⁷ Krippendorff, Klaus: *The Semantic Turn. New foundation for Design*. Boca Raton, London, New York 2006.

- is a medium of interpretation and
- is a process of coordinating the perception and actions of its speakers.

Krippendorff is also talking about the context of products, because the designers are less and less the inventors of products but more and more their interpreters. A good example is the global car industry: the so called SUV (Sports Utility Vehicles) class is very successful since the beginning of the 1990's (the first Gulf War against Iraq was in 1991). Not many people really need a four-wheel drive, a heightened seating position, special rams, because mostly people use these cars for bringing their children to school or to some leisure activities. And in the cities, where most of these cars are used, nobody needs these outdoor features, they are just symbols for the survival in urban societies.

4.3 About the future of meaning

No doubt that “meaning benefits”. Product Design is no more an inventive discipline but more and more an interpretative discipline.

Making Meaning: Evolution of innovation and consumer demand ²⁸		
1900's Product Focus >	1950's Brand Focus >	2000's Experience >
Functional benefits Economic benefits	Emotional benefits Identity & Status	Meaning benefits

4.3.1 Interface & Interaction Design

The 1980's became an epoch-making decade for design because this was the beginning of the micro-electronic area and the “chip” has to

²⁸ Diller, Steve; Nathan Shedroff, Darrel Rhea: Making Meaning. How Successful Business Deliver Meaningful Customer Experiences: Berkeley 2006.

become the index fossil of the 1990's. This was called the digital revolution which is still going on.

Similar to the invention of movable type by Johannes Gutenberg in the fifteenth century, which paved the way for the triumph of book printing around the world, the digital revolution triggered profound changes in human behavior, communication, centralization and decentralization, education and training, work and leisure. The last 25 years have affected the life-worlds of wide segments of the population more deeply than ever before in such a short period: the transition from analog to digital technology marked not only a technological, but also a cultural revolution²⁹.

The human evolution took more than 65 millions of years, but before 1,9 Million years the "homo erectus" became our direct ancestor. But in these last 25 years much of our knowledge and our behavior changed completely – the change from analogue to digital became really severe. The basic shape of the human body and brain, Stephen Jay Gould³⁰ said, have not changed at all over the past on hundred thousand years, while technical change hurtled along at breakneck speed – especially in the twentieth century.

We learned that human beings had to understand digital principles much quicker than ever before. The rapid progress in the dematerialization of products carried totally new challenges in its wake. Interaction and Interface Design grew into important fields, especially for the product designers – but why not for Graphic Designer? The main reason was that Product Designers started from their experience how to handle analogue products and how to transfer this knowledge to digital products, like the many Interfaces in all types of products.

Bill Moggridge, co-founder of the global design research practice IDEO, and Bill Verplank of Interval Research³¹ introduced a clear terminology and gave us two excellent explications:

²⁹ Bürdek, Bernhard E.(Hrsg.): Der digitale Wahn. Frankfurt a. M. 2001.

³⁰ Gould, Stephan Jay: Full House. The Spread of Excellence from Plato to Darwin. New York 1996.

³¹ Spreenber, Peter: Editor's Note to interact. Ed. by the American Center for Design. Vol. 8, Nr. 1. Chicago 1994.

- *Interaction design* is related to the way we handle a digital product (be it hardware or software) and to the behavior patterns that are determined by a specific operating procedure.
- *Interface design* in turn refers to the screen layout on the monitor, display and so on (i.e. the visual representation and user interfaces of hardware and software).

4.3.2 Strategic Design

In the moment we are moving from Corporate Design/Identity to Brand Design. The value of a product is founded by its social status, by the value society is given it or at least by the “meaning” of a product. The Design Management Movement, which started in the 1970/80’s, was mainly engaged in the processes of Design on a company level, Bang & Olufsen in Denmark, Braun in Germany, Olivetti in Italy or Sony in Japan etc. etc.

When we are now moving to Strategic Design, then it is important to discuss the semantic values (their meanings) of products much more detailed. Everybody knows: “Made by Sony”, “Made by Daimler Benz”, or simply adidas, Apple, Blackberry, IBM, Levi’s, Microsoft, Nike, Nokia, Palm, Puma, Siemens, Swatch, Vitra and so forth. The name of a company has to have the same connotations worldwide, and product design is an important factor in economic globalization, because Design visualizes the qualities and the values of the products – and therefore the brands. Brands, therefore, have a growing influence on value creation in companies, a development that conforms what has been seen in a different context. That non-material qualities are rated far higher than material ones. Products increasingly convey messages rather than fulfilling practical functions.

The problems of globalization are changing the situation in many European countries. It is obvious that we hardly can compete with these thousands of young Chinese designers, which are moving more and more to Europe, because they are much more cheaper and may be even more creative.

Therefore all the big design consultancies like IDEO, frog-design, Lunar Design, Designworks, Design Continuum, Design affairs or ZIBA Design are operating as strategic design companies.

They are offering more than just products, but also the “management of meaning”.

“Management of Meaning” concentrates to the questions how the costumers are viewing products and communications in a semiotic sense. The success of a company is based on identity and differences, a distinction which the German philosopher Martin Heidegger³² made 50 years ago and which is still very actual to all these branding discussions which are going on.

4.3.3 New Technologies / New Materials

As mentioned above, designers are at a crossroad, whether they have to decide for a more to life-style-orientated design (like fashion, furniture etc.) or more to technology driven products. I still believe, that Industrial Design has a lot to do with technology. Not in the sense of Leonardo – who invented so many machines, transportation device, products etc., but in a complete new sense. In the 20th century we saw a rapid change from mechanics to electrics, and from electronics to the biological, nano and robotic age etc.

The very traditional way of product development went from a functional analysis to requirements (briefing), to design concepts, prototypes on to final products. In this cycle the designers and engineers often have to discuss, what type of materials they need for problem solving. But today things have changed completely. In the field of plastics e.g. you can find a huge number of new materials and the designers are asked to find application for them. They are not the inventors of materials (this is based on science & technology) but they are the interpreters of the new materials. And this is very often a practical appliance but more and more a semantic interpretation of these materials.

5. Design as Science?

Under these aspects, there is no longer the question, where Design is belonging to: Art & Technology was the paradigm of the 20th cen-

³² Heidegger, Martin: Identität und Differenz. Pfullingen 1957.

ture. For the 21st century it is obvious that Design is mostly linked with Technology and the Sciences. There are so many new fields of Research with really needs Design for visualization and interpretation. Therefore Technology & Culture is the new topic. Therefore I will come back again to Nigel Cross³³ who mentioned three forms of science:

- *Science of Design*: That means all activities to understand Design from other scientific disciplines.
- *Design Science*: That means mainly the methodological approach, to understand, explain and improve the design process itself.
- *Science for Design*: That means the development of an independent discipline of Design, in which the design discourse is reliable and verifiable.

Today the development of an independent discipline is the most important topic for design practice and for design research in the 21st century. But to become a discipline although means, that the designers have to “discipline” themselves.

The designers are not the problem-solvers of the world, they are not responsible for everything especially in all developing countries, but they are responsible for something special – as I pointed out earlier, but to be “un-disciplined” is so much fashion today. Prof. Christian Janecke from the Academy of Art and Design at Offenbach just gave me a good picture of the actual situation: art and design might be seen as a table tennis table and many theorists are orientated themselves along the net between both sides. They can fall down by chance to both sides – like the ping-pong ball itself. But this is not science, its more like gambling.

During the Second Research Symposium in Switzerland (2005), Franz Schultheis³⁴, talked about the “discipline of design” and he mentioned, that the people acting in this discipline have to define their own rules, their own laws. They have to define themselves what

³³ Cross, Nigel: Design as a discipline. In: Durling, D., and K. Friedman (Eds.): Doctoral Education in Design: Foundations for the Future. Staffordshire, UK 2000.

³⁴ Schultheis, Franz: Disziplinierung des Designs. In: Zweites Design Forschungssymposium 2005. Zürich 2005 (SDN – Swiss Design Network).

their discipline is. Design – which is acting between Art, Science, Technology and Culture has still a lot of problems to do this. But we have to encourage the students to cooperate in the development of this new “discipline”.

Again, it is important to understand that a “Science for Design” is mainly based on principles of human science, not on natural science. It is not necessary to measure the quality of design, but to understand the users, their behaviors and their wishes.

6. The lost of utopia

Not only in architecture, art & design we can note the loss of utopia today. Looking back to history we can also see, that creative disciplines always had a vision of utopia. Starting from Thomas Morus novel “Utopia” (1516), to Francis Bacons “The new Atlantis” (1627) to William Morris “News from Nowhere” (1890), to Ernst Blochs “Geist der Utopie” (1918) (“The spirit of Utopia”) there was always an utopia idea in the work of architects and designers. At the occasion of the Form Design Linz (1980) Jürgen Zänker³⁵ gave an excellent overview on the utopian thinking in design. The Bauhaus and also the Ulm Design School had their own vision³⁶, how design could change society, which was really an utopian concept. But ironically, when the political and radical student movement in 1968 reached the Ulm Design School, there was no more discourse because Design had reached the level of economy: the utopia of design was profit³⁷. But then, it became more and more worse. Globalization took command and global markets are based on the so-called “negative utopia”. We are more and more moving to a global department store and human being becomes Design³⁸.

³⁵ Zänker, Jürgen: Utopisches Design oder Utopie des Designs. In: Gsöllpointner/Hareiter/Ortner (Hrsg.): Design ist unsichtbar. Wien 1981.

³⁶ Bürdek, Bernhard E. (1991): Design, a. a. O.

³⁷ Grasskamp, Walter: Gescheiterte Gesamtkunst. Design zwischen allen Stühlen. In: Kursbuch 106: Alles Design. Ed. Michel, Karl Markus/Spengler, Tillman, Berlin 1991.

³⁸ Beck, Ulrich: Was ist Globalisierung? Frankfurt a. M. 1997.

Burghart Schmidt³⁹ realized that in the work of Ernst Bloch, concerning utopia there are two forms of myths: one is an archaic one and the other is a revolutionary one. That means, one is for stabilizing or reminding us to history, the other for pushing us to future. In the moment I have the impression, that in western civilization there is very few power for pushing, whereas in the booming Asian countries (like China, India, Japan, Korea) there is a lot of it. Maybe utopian thinking is directly linked to the socio-economic dynamic?

7. At the end everything is design

This debate shows us, how design has changed its role in the 20th century. In the 1920's the Bauhaus started to make a new unit between Art & Technology which was later called Design. In the 1960's the Ulm Design School started to integrate heavily new sciences into the design education. In the 1980's the postmodern movement changed the intension from function to meaning. Now we can see an intensive and rapidly growing group of designers who try to artificialities or decorate our life's, which is – in my eyes – a fall back into the 19th century.

Heinz Hirdina⁴⁰, the most distinguished design historian and theorist in the former German Democratic Republic, once gave a very competent review of the Design in the 20th century where he mentioned the inflationary usage of the term "Design". He said that the supplement "designer" makes the aesthetical specific (product) suitable for the distinction (body design, designer drugs, design food, design watches, designer furniture etc.).

In July 2008 at Frankfurt am Main there was for the third time the exhibition "the design annual" which came along this year with the title "inside: Showtime". A mixture of young designers and in-

³⁹ Schmidt, Burghart: Postmoderne, a. a. O.

⁴⁰ Hirdina, Heinz: Design. In: Barck, Karlheinz/Fontius, Martin/Schlenstedt, Dieter/Steinwachs, Birkhart/Wolfzettel, Friedrich (Hrsg.): Ästhetische Grundbegriffe. Historisches Wörterbuch in sieben Bänden, Band 2. Stuttgart 2001. Nachgedruckt in: Hirdina, Heinz: Am Ende ist alles Design. Texte zum Design 1971–2004. Hrsg. von Nehls, Dieter/Staubach, Helmut/Trebeß, Achim, Berlin 2008.

ternational brands, using a little glamour and all manner of show effects the latest products but likewise the people behind them are staged: Design as a Hollywood event. The famous art and design critic Thomas Wagner said – when I met him there – there is no more discourse possible about it. It's just an event. But it is (not) the end of Design?