Quo vadis Design?

4 Theses
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Frauenchiemsee

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Preface

In September 2013, designers met scientists and business representatives on the island Frauenchiemsee to discuss the future of design. The association Industrie Forum Design invited them there for this purpose.

The event was shaped, for one, by a persistent, though not exactly new concern that design is being marginalized and merely plays a cosmetic role determined by marketing. However, the more profound concern that gave impetus to the event is the prevailing lack of clarity for many with regard to the place and importance of design in the sciences and in society. The discussions on Frauenchiemsee served as a way to take stock of, orient, reappraise and sketch the future of design.

The participants aimed to give serious consideration to the challenge of how to design all aspects of the professional and private spheres in a way that is both dignified and humane. Anyone who takes this matter seriously knows that planet Earth is in jeopardy – in both environmental and financial terms – due to the overexploitation of resources and the excessive amount of debts. Though the situation was once different, this is why a design conference is now bound to tackle more than just the graphic and technical aspects of design. One question that kept coming up during the discussions was whether and how design can also live up to environmental responsibilities. This issue addressed not least the design education, which ought to have a solid scientific basis, as many called for, to make the connection to other disciplines and to science and research a fertile one.
Among the many insights from the conference is the realization that approaches already exist that demonstrate how design can contribute to the solutions to the current crises. A broad and basic scientific education provides the necessary knowledge for working with and designing environmentally friendly materials, for instance. With these kinds of skills, it is possible to develop energy-efficient means of transportation. The job of designing means of communication in a sustainable way, thereby playing a part in putting the internet in the service of humane objectives, no longer requires any special justification. The conference considered all aspects of the spaces in which humans live and work. From apartments to the workplace and the routes in between: Everything needs to be redesigned if anything at all is to change for the better. All of the conference participants agreed that the corporate importance of design in global economic competition also has to be a major consideration in establishing this new understanding. At which point in the development, planning and production process is design deployed in a positive, appropriate and profitable way?

The conference speakers (Andreas Dorschel, Winfried Nerdinger, Nils Ole Oermann, Wolfgang Sattler) wrote essays based on their talks. Several discussants (Thorsten Frackenpohl, Sandra Hirsch, Lisa Hoffmann, Kristian Gohlke, Johanna Kleinert, Helge Oder, Ingo Wick) also turned their contributions to the discussions into essays. These essays round off the scope of the conference. Information on all of the authors, the organization, the program and the list of participants are located at the end of this volume.

Wilhelm Vossenkuhl

1 Unfortunately due to a lack of time, Torsten Oltmanns was unable to turn his presentation into an essay ready for publication.
Prof. Dr. Wilhelm Vossenkuhl (*1945 in Engen) is Professor Emeritus of Philosophy at the Ludwig Maximilian University of Munich. From 1997 to 2003 he was Senator of the German Research Association (Deutsche Forschungsgemeinschaft) in Bonn. In 1998 he received the international philosophy prize from the Margrit-Egnér Foundation in Zürich. In the 1980s he worked with Otl Aicher on a number of projects. Prof. Vossenkuhl is the author of books and articles on ethics, Ockham, Kant and Wittgenstein. He achieved public prominence by way of appearances on television and radio programs.
Designing everyday objects or buildings, whether for residential or commercial use, entails a great deal of work, which leaves precious little time for reflecting on design work in general and its future. The same is true for doctors, engineers and other professionals whose work is closely related to the lives of human beings. They all mainly attend to what needs to be done and less to things that, more or less in general, could be – perhaps even should be – thought about and considered beyond the scope of their current activity. Moreover, designers work in a complex world of clients and developers, competitors and critics, all of whom have specific ideas before the designers are even brought into the picture and can develop a project. With regard to the concrete ideas and objectives that their work is subject to, designers usually appear on the scene by definition too late. This complicates or, in the worst case, hinders designers from being able to clearly define their tasks and objectives as they see fit. Then, in addition, they are bound to somehow manage to meet various goals, such as maximizing profits, boosting consumption, optimizing products and fulfilling sustainability targets – all while going up against competitors in the global marketplace. Anyone who does neither resign him- or herself to the status quo, nor back down or adapt to the way
things are when faced with this situation will therefore attempt to rewrite the rules of design as they apply to the world in which humans live. As in many other disciplines, the result is always a balancing act between conformity and innovation, between heteronomy and self-determination.

The ability to use design to bring order to the world in which we live requires good training and education that not only fosters knowledge, but also creativity. It may sound easy enough, but in reality it is almost impossible because establishing order through design requires the hand as well as the head. The mind can wrap itself around almost any course of studies, but to have the certain touch, the right feel for something is essential if something greater is to come of it during the years of study. Doing the impossible – it might sound trite, but that is precisely the crux of a designer’s training. The course of studies should foster what the hand can do naturally. Not much more can be expected than this. The best degree program, even in an age of ever more sophisticated software, can only meet with limited success if the natural talent is lacking. The head and the hand have to be one organ and complement and inspire one another.

This reciprocal inspiration is what Otl Aicher meant when he reflected on ‘making’ and ‘use.’ ‘Making’ sounds like ‘maker,’ but that is misleading. In order to understand what ‘making’ means, we have to consider the Greek word ‘techne,’ the origin of the word ‘technology.’ Aristotle called techne an art, a skill; “it is a habit of creation combined with true reason.”1 This may sound strange to modern ears, but the reference to the great Greek philosopher nevertheless shows that he described a long time ago what we are able to accomplish today only with great effort. The making is obviously not a new subject. It is older than the modern age, though it is the very issue of modernity. This becomes clear when we look back at the history of making, in which we come across – just to name two examples – the Neapolitan Vico in the early 18th century and Karl Marx in the 19th century.2 Both were convinced that we human beings shape our world on our own; indeed, that we make and literally produce
ourselves in the process. In an age in which – at least as a promise for the future – human genes can be altered or, in a sense, defused to protect against hereditary diseases, and when each individual human being can be so precisely parsed with the help of algorithms that his or her future wishes are known in advance, this idea is nothing exceptional. Or so it seems.

We must not overlook the great discrepancy between these biological, IT and mathematical possibilities and what is meant by ‘making.’ Those possibilities have absolutely nothing to do with what we are able to do ourselves. On the contrary, they shape us, regardless of what we want to make of ourselves, and above all regardless of whether that which happens to us in the process is actually good. Compared with this, what we are able to make of and form ourselves has faded into the background, as good as forgotten. Unfortunately, this trend has not entirely spared the world of designers, either. The link between the head and the hand is definitely a topic in some design studies programs, sometimes even an integral element. However, the reciprocal dependency of thinking and making is given too little consideration. Otl Aicher described the basic idea a quarter of a century ago: “Because the hand can grasp, the mind can grasp, too. Because the hand can take hold, our minds can also apprehend.” Aicher is talking about the “playing hand” as a physiological prerequisite for design and its use as a “source of recognition,” which he discovered in Wittgenstein’s philosophical writings.

At this point, many people will stop and wonder whether design today is not already overstretched by such thoughts, or whether such thoughts are not completely besides the point. Aicher believed quite differently. He goes even further, as this quote, which sets out great demands, demonstrates: “Despite everything, design also continues to be a cultural activity, and its space for reflection is filled with fundamental questions pertaining to human existence under the conditions of not just industrial reproduction, but industrial production, which is to say of
life in a new and largely artificial world.” If we take this seriously, then we also – like Aicher – have to take seriously the claim that design, with its complex set of tasks, also amounts to “a decision about a way of life.” When Aicher penned these thoughts in the late 1980s, biopolitics and its dreams of gene-based breeding and reproduction was still far from becoming a reality. The artificial world that Aicher refers to in the quote is amplified even further by these dreams because the artificial will not stop at human design and the genetic make-up of all living beings, including that of humans.

Aicher did not prescribe any course of action for overcoming modernity’s permanent state of crisis. However, he did assign design a certain position that must be maintained if there is to be any hope at all of managing the crisis and if design is to have a future. “We design because we are searching, not because we know”: the place of the designer cannot be formulated more precisely than that. Aicher’s warning to distrust the zeitgeist, to oppose it if necessary and to object to superficial convention is not dated. Rather, we ought to show great nerve and heed it at all times. To design is to reveal, “to show how something is made.” It is neither irrelevant nor reaching too far to call this process of making ‘enlightenment.’ In the process, a lot more than the function and purpose of the design is elucidated. The task of design is embedded in the world in which we live, where questions of functioning products, their serviceability and market price are not the only issues; design is also about the order in which people can and want to live with these products, a live-world. This is why Aicher firmly believed that designers are “a kind of moralist,” “they judge, their work consists of valuations.”

If design is seen as a demanding task within the framework of the world in which humans live, then it necessarily has to do exactly what Aicher said: judge. Each valuation is based on prior assumptions as to what is good and bad, right and wrong. If it did not, then it would not be responsible. However, if these assumptions are not to harden into dogmatic and domineering tenets, then they must be a part of the search for what is right and expose themselves to critique and review. A public forum is the only venue for reliable criticism. Even self-critique cannot manage without public opinion because the valuation of oneself is only reliable when measured against what others think. Without public input, the search for
what is right quickly ends in self-satisfied dogmatism, and dogmatism translates into tedium and stagnation, if not worse. One indispensable source of public critique is the university. Another public, which is no less critical, can be found in the market and among consumers. Beyond the university and at the edge of the market, there is a qualified critical public in the form of professional journals and forums used by architects and designers to organize themselves. These three public cornerstones create the framework for the question of where design is heading to. The search for the right and good design moves within these rough contours.

This was the very framework that applied to the presentations, talks and discussion on Frauenchiemsee. Many presentations showed in various ways how the university can become an effective venue for public critique. Designing is a matter of searching, an open-ended process; it is not a precisely synchronized and exactly defined procedure. Design degrees have to account for this fact. In this respect, Wolfgang Sattler referred to Hans Gugelot’s statement that design cannot be taught and that questions are more important than answers. Sattler expressed certain convictions, which were already in practice at the Ulm School of Design (Ulmer Hochschule für Gestaltung), that design is all about opening the minds, and not just during training and education. He claimed that designers are enablers, and if they do not manage to achieve this, they are only capable of providing prosthetics.

Fritz Frenkler addressed the idea of making and emphasized the privilege that everyday use should have over vain “author designs” in the design process. However, Frenkler believes the process of making has to be learned and should first be taught. According to him, the process of learning how to make has yet to be endowed with its own scientific basis and quality, which are essential nowadays. He believes that a new set of methods within related sciences and disciplines has
to be developed for design programs. This will prevent design from becoming just one among other scientific disciplines. In many cases, the solution to the practical tasks of a designer now requires broad as well as in-depth scientific expertise. For Frenkler, training and education have to accommodate this.

Winfried Nerdinger addressed the qualified critical public outside of the university setting at the edge of the market. Nerdinger doubted that this public has the appropriate voice, however. He objected to the lack of a journalistic design critique in analogy to architectural critique. If such a forum existed, it may illuminate contextual design problems that designers cannot anticipate, as is the case with architectural critique. Nerdinger also critically questioned whether the pressure that design faces and is exposed to as regards innovation is absolutely unavoidable. He further wondered if there might not actually be much more continuity in design, or at least the potential for it. Nerdinger presented a similar argument in the introduction to his exhibition publication Geschichte der Rekonstruktion – Konstruktion der Geschichte (The History of Reconstruction – The Construction of History). These considerations raise the question as to whether historical recurrences might not also have a purpose in design within the reference framework of functionality and within its historical and aesthetic context. At least with regard to this frame of reference, the question of why design is developing in one direction and not another is a valid one. Nerdinger’s reflections culminated in the assertion that the context in which design occurs is more important than the cult of the new. According to Nerdinger, innovation has no intrinsic value. He believes that it is possible to formulate answers to the question of the future of design by looking at two basic points: the models of designers and their self-perception. Do the models convey a good design standard? And how have the designers realized what they themselves engendered? For Nerdinger, those are the decisive questions that provide information about the future of design.
The market and consumers, which form the third pillar of the public, were not forgotten. In keeping with his work as a consultant, Torsten Oltmanns very decidedly and deliberately chose the economic perspective, asking how notions of retail and consumption can be combined with the solution of the design problem in a meaningful way. He doubted that marketing is the natural enemy of designers and argued that the job of design is not fully realized and fulfilled in individual products. Instead, the task consists far more in designing whole systems and has less to do with creating a shape than empowering users. Oltmanns used mobility as an example to elucidate his position. According to Oltmanns, if we wish to redesign mobility – something that many people are interested in – we would first have to conceive of it systematically. The various forms of mobility should not be thought of in either/or terms, however, but rather in terms of this as well as that, corresponding to the changing needs of humans.

Oltmanns was not especially receptive to the economic-ethical objections subsequently raised by Nils Ole Oermann against the privileging of economic considerations. It was certainly not Oermann’s intention, however, to contradict Oltmann’s general argument that the future of design depends mainly on the process quality of products and less on the quality of results or performance. The educated consumer appreciates the process that ultimately becomes a product. Both men agreed on this point.

Sattler’s proposition that designers should be enablers and Oltmanns’ call for design products to empower users can be joined together in a coherent way with a little good-will and optimism. Whether the union of the two is truly harmonious, and whether design and the market can form a coherent whole depends not least on whether consumers wish to allow themselves to be empowered in the manner proposed by Oltmanns. Whether consumers ought to do this, and whether they can with respect to the design products on offer, would be a matter for design critique, which, as Winfried Nerdinger has determined, does not yet exist, however. If such a forum for critique did exist, the critical public voice for design would be more or less complete, also in terms of function, and the question of the future of design would no longer need to be specifically raised as the question would be rendered redundant.
1 Aristoteles, *Nikomachische Ethik* (Nicomachean Ethics), 1140a.


6 Ibid., 75.

7 Ibid.

8 Ibid., 60. This corresponds precisely to what Wolfgang Sattler calls “wicked problems” in his essay.

9 Ibid., 61.

10 Ibid., 67.

11 Nils Ole Oermann raises ethical questions about design and the responsibility of the designer in his essay in this volume.

12 Hans Gugelot (1920–1965) was an architect and designer. He was a lecturer at the Ulm School of Design from 1954 until his death in 1965.

13 Wolfgang Sattler addresses this issue in greater detail in his essay in this volume.

14 In his essay in this volume, Winfried Nerdinger demonstrates how design critique following the model of architectural critique could look.

Prof. Dr. Andreas Dorschel (*1962 in Wiesbaden) has been a professor of Aesthetics and a Board Member of the Institute for the Aesthetics of Music at the University of Music and Performing Arts Graz since 2002. After studying Philosophy, Music and Linguistics at the Universities of Vienna and Frankfurt am Main he taught at Marburg, Dresden and Norwich (Great Britain). In 2002 he obtained a postdoctoral qualification from the Faculty of Humanities at the University of Bern. In 2006 he took up a number of guest professorships, including one at Stanford. Prof. Dorschel has been a member of the board of trustees of the Austrian Science Fund since 2008. He has been a member of the HERA (Humanities in the European Research Area) Review Panel of the European Science Foundation’s (ESF) Joint Research Program (Strasbourg/Brussels) since 2012. In 2011 he received the Research Award of the Province of Styria. He has published numerous articles, notably on the subject of design.
Icons without Turn: On Images and Words

Who could seriously anticipate the need for a uniform direction in which design were to develop, be it for mechanical or organic reasons?

To whom does the future belong? “Es, pues, destreza no común inventar nueva senda para la excelencia, descubrir moderno rumbo para la celebridad”¹, Baltasar Gracián y Morales remarks in the seventh chapter of El Héroe (1639), his astute book on the hero: In order to find a new way to stand out, a trick not altogether common is to come up with some modern – that is, in Gracián’s usage: unheard-of – track towards celebrity. Some heroes of modern academe and journalism, though, have made common the invention of such tracks, now known as ‘turns’, and of conquering the future in this way. Whoever turns swiftest, stays one step ahead of the others. Among the modern rumbos, or tracks, the discovery and invention of which Gracián presciently recommended, the visionaries of the future recently took a special shine to the “iconic turn”², the dawn of a golden age of the image. Admittedly, fame created in this way does not stay sweet in the mouth forever. It lacks the permanence that Gracián placed unique value on. Others will breezily come along to polish off the latest ‘turn’ and dish up a brand new one. Every medium that is fluffed up as the object of such a turn is, after all, just one among many – the arbitrary force that is raised to the dominant feature of an epochal upheaval suffers the vengeance of the next arbitrary force, which foments the same upheaval with any other media of its choice.
If, by way of contrast, we understand each medium as one among many, as something that distinguishes itself from others not least in the way that it suits better some things and less so others, we might be more thoroughly, more skillfully prepared for the future. That shall be the approach taken here.

In the world of commodities that surround us, it is not only individual inventions that sporadically emerge while others disappear; rather, from time to time whole classes of products are marginalized or turned into collectibles that are no longer used for their original function. Thus it is that in the last decades there has emerged a whole, steadily expanding species of artifacts that no longer indicate directly what they are for. They stem from the work of product designers, and at the same time they produce significant changes in that work.

Pincers, pencils, cups, shoes – the whole universe of products that originated in manual production methods and was then adopted and modified by industrial fabrication – allowed us to identify immediately what they did: that pincers grab, a pencil writes, a cup does not leak, the shoe is tied. So, too, those products that – in conjunction with considerable work – performed the function of the washing machine before the latter set out on its march to victory. While those utensils have disappeared (or migrated to flea markets and museums and thus into folklore), pincers, pencils, cups and shoes will continue to exist for the foreseeable, and even the unforeseeable, future. Both phenomena can thus be found: coexistence with and marginalization by those new products that no longer demonstrate their function or, like the fully automated washing machine, demonstrate it predominantly in an indirect way, through signs.

Telephones, photocopiers, scanners, televisions, computers, hi-fis and cameras are in truth black boxes for their users, the majority of whom have barely a clue about how they work. The form of their surfaces as a whole gives little or nothing away about their function. So, despite all the differences in what they do, they all resemble each other in this respect. The small tablet or the flat box is the shape that many of them aspire to. It is only at one point on their surface that...
most of these devices divulge their truth. They have got a ‘display’. This field is intended to show unequivocally in numbers, words and pictures what this mysterious object does or does not do (for even errors have to be accurately displayed). But does it really show that? And as for those numbers, words and pictures: Which is best? Anyone who has ever quailed before the mad blinking of a copier or the muddle-headed verbal prompts of a computer will have no doubt that designers would have more serious food for thought than creating cone-shaped kettles.

Which facts can be expressed more tellingly in words, which more succinctly in pictures? And why? Of course there is a glut of things that can be represented in this way or that; there are but a few marginal cases that cannot be reproduced even in one form or another. The quality of the representation, however, can differ immeasurably depending on the medium. And every representation, even the most detailed, contains less – and more – than the object to which it refers; otherwise it would not be a representation, it would be the object itself. (Even a photograph is a two-dimensional translation of a three-dimensional object, and no art of perspective can transform the flat land of paper or canvas into the world that we experience in all its height, breadth and depth.) The question that product designers would like to resolve, or that they at least have to confront, of where in their domain immediacy becomes mediation, is for other reasons even more problematic for communication designers. They undeniably find themselves in that curious halfway house that is characteristic of contemporary mass communication where there is simultaneously both a dearth and a flood of images. This is the age in which the basic facts and contexts of economics, politics and society, but also of the natural sciences, have taken on nondescript, quasi abstract character, thus refusing any image in this respect, and it coincides strangely with the triumphal procession of those new media that constitute an apotheosis of precisely this form of representation and that demand to be filled with images 24 hours a day, every day. Even in the traditional media that are not novel at all, in newspapers and books, the image is forcing its way further into the foreground. Anyone who does not throw up their hands in surrender in the face of this paradox and who clings on to the idea that the manner of representation has reasonably to measure itself against the object being depicted, and not the
other way around, is faced to an even greater extent by the question: What can be better represented by language, what by images? The assumption that is made here is now not only markedly old-fashioned: for while the gist used to be what one wanted to say through this or that medium, contemporary culture has this idiosyncrasy that its media claim to bear their own justification within themselves. What is more, it may appear doubtful whether a premise of the problem is in fact applicable: Does the object to be portrayed actually measure the suitability of a method of representation? In an obvious sense, this is not the case. The suitability is clearly also measured by the subject providing the representation. Much, or everything in some cases, depends on to what degree a person has mastery of the powers of verbal or visual expression. There are in fact reasons in abstracto that argue in favour of an affinity, for example, between political conviction and the word. Yet they become irrelevant for and in the face of those whose talent lies rather in tattooing and shaving heads. Their political opinions appear in the image that they present, not in words, which they often enough do not much have at their command and which they, in their picturesque clarity, hardly need at all. In the light of the diversity of individual abilities, the question is directed therefore in a more pedantic formulation at what one can represent more adequately with which resources – assuming that one is able to do so in the first place.

A flood and a dearth of images, then, characterize the modern situation; though contradicting each other, they are in fact connected. Both define the context in which decisions for or against words or images have to be made. A culture long dominated by words seems to transform itself into one dominated by images – something that mainly testifies to the ever more commanding position held by electronic, primarily visual mass media.

“A culture long dominated by words seems to transform itself into one dominated by images – something that mainly testifies to the ever more commanding position held by electronic, primarily visual mass media.”
hours of the day in front of the television, at game consoles or on the Internet. The doubt about whether the media map, orchestrate or feign reality, whether they reproduce or play politics, does not in fact justify the hastily drawn conclusion that the difference between appearance and reality is obsolete; rather, it assumes this. Yet the problem that it identifies, the problem of the relationship between reality and its reflection, is in fact critical. Without the context that it provides, it is almost impossible to understand the economic exploitation of appearance.

If media are in private hands, their purpose and their commercial premise is generally to provide a profitable environment for all kinds of advertising. In a market economy, the visible shape of the objects that are offered for sale, and not least the image that their packaging and advertising present, function as stimuli. In this respect it is possible to assert that in this day and age, things, insofar as they are goods, appeal to the eye with a forcefulness that was never the case in any previous era. Objects whose raison d’être is their ability to be sold are subject to the tendency that they are less than they seem. Alongside them, however, stand things for which the opposite is true: They appear to be less than they actually are. If appearing to be more than what a thing actually is applies as a principle of an inanity jazzed up by advertising, then conversely being more than what a thing appears to be is the principle that lies behind the great technical risks of the present day. Nuclear reactors such as the six power plant units of Fukushima Daiichi may look like something different and (unless they suffer a hydrogen explosion as they did on 12 March 2011) just as boring as any other factory; yet their appearance reveals nothing about their potential benefits, nor about the damage that they can wreak. Sometimes the protests against sources of danger of this kind are scuppered by the global, yet intangible, nature of the risks that they

“If appearing to be more than what a thing actually is applies as a principle of an inanity jazzed up by advertising, then conversely being more than what a thing appears to be is the principle that lies behind the great technical risks of the present day."


create. No one has ever seen the radioactivity that has been released, or the holes in the ozone layer through which ultraviolet rays, also invisible for their part, are increasingly finding their way to earth. In this sense it may be worth recommending that we should not believe our eyes. However, it is also the case that, by the very nature of the flood of images, even more appeals are made to the faculty of sight, and that this faculty does not always warn us of critical dangers, such as chemical and nuclear contamination. We can know about these kinds of risks only in abstracto; we have to make an object of thought what we cannot see. Words and numbers provide the media for such theoretical knowledge. To want to use them in order to instruct would be one possible consequence of a reflection on what in the future the eyes will be able to cope with and what will remain denied to them. Yet for all that one could also argue in favour of producing images that signal to the eye, and thus make evident in an indirect way, the things that are not revealed directly by sight.

The difference between image and word is, however, not absolute. Language takes on the character of imagery in metaphors; images are reduced to sign language in pictographs. There is a continuum between representation that is based on similarities and representation that serves as a substitute – the latter emerges in a constant trend toward the abbreviation of the former. The process of abbreviation, impressively documented by historians of script, draws only a conclusion of what images were from the outset: Compelled by the need for economy, all images are abstractions; by virtue of the designers’ freedom, all images are stylizations. That there exists a spectrum between the poles of image and word does not, however, rob designers of their choice of the means of representation, but only increases their options. And the decisions are not prejudiced by an obvious inferiority, of whatever kind, of one medium or the other. There are words that say more than any image focusing on the same content, and there are images that reveal more than all the words that address the same
content. Whether this or that is the case does not have to be, but at any rate can be a function of the content of the representation itself. An extremely simple difference imposes itself straight away: What we are able to see with our eyes lends itself more easily to representation through an image; what in contrast does not offer any physically perceptible quality (even if what we physically perceive may very well be important for identifying it), for example what degree of freedom is granted by the institutions of a state, is by its nature associated more closely with the word. That does not mean that it is *ipso facto* closed to pictorial representation. This is especially true of artistic representation, which, if we accept the classical definition of art, transcends physicality even in its physical manifestation.

The simple contrast circumscribed before points to an actual boundary of pictorial representation. Contexts can become abstract in such a way that it affects their traditional pictorial expression, their emblems or symbols. What states are today rubs up against their traditional insignia, the bears, eagles and lions; yet a plausible replacement from the rest of the descriptive world would not be available without problems. The difficulty described here can be read off already from less complex examples and beyond historical change. The spatial configuration of a house can be more easily captured in an image, yet the functions of the individual rooms, which we of course cannot ‘see’, are frequently recorded on the floor plan in words: ‘living room’, ‘dining room’, etc. A chair, a car, a ladder are visible objects and can be identified from passable pictorial representations by the majority of people without further ado. But the question is then raised of whether these objects are comprehensible from a simple drawing to someone who does not know what a chair, a car or a ladder is. For they are constituted by their function, which, although it can be made visible in its form, is not a material attribute in the same sense as the colour is, for example, in the case of the chair which may have a red coat of paint. Even in the most successful example of functional design, the supposedly direct evidence of a function depends in truth on prior knowledge. If such knowledge is not present – and the more complex and unfamiliar products become, the less it is readily available –, then a switch from simple picture to an explanation of the function in word – and if necessary in deed – can hardly be avoided. Anyone who has to operate a computer printer, a dishwasher or even a ticket vending machine in a foreign city – however simple and clear the operating
controls are intended to be, especially in the last example —, will in all likelihood be helped by a couple of plain-speaking words (or numerals). The often meaningless character of images in the news attests to this same boundary; taken as a picture in its own right, the visual stereotype of the black limo drawing up in front of a conference building may not give the slightest inkling of what all the fuss is about: whether negotiations are being conducted for the purpose of war or peace, competition or cooperation, business, democracy or any combination of the above.

Images promise not to limit comprehension in any way. They address themselves consolingly to illiterates and tourists. “Was G’lehrte durch die Schrift verstahn, / das lehrt das G’mähl [Gemalte] dem g’meißen Mann”\(^3\), reads the caption under the woodcut vignette of a pamphlet from the Thirty Years’ War: “What scholars understand through the written word, / the common man learns through pictures” – an apology, as it were, for the visual supplement to Gutenberg’s intellectual language of letters. While reading the written word was for centuries reserved for the few as a skill arduously to be acquired, and may become so again in the course of history, the image has since time immemorial included in its circle of addressees the lowest strata of society. Everyone can have a look. The image appears to offer the same generosity to the nations in which the people are also linguistically divided. For it is not bound to a national language. Still, images remain bound to a culture. Otl Aicher’s pictographs for the Munich Olympic Games of 1972, which in their economy of design appear to be the consummation *par excellence* of the abstraction of the human race, in truth require for their understanding the Western lifestyle – down to the use of the water closet – and did function only insofar as this culture had gone global, at least for people who could afford the luxury of traveling from sub-Saharan Africa to Bavaria for the purpose of viewing athletes.

A picture does not achieve its aims merely when someone sees it. It demands recognition and in this respect also has to be interpreted. The experienced execution of this act of comprehension when recognizing a traffic sign for example, which does not even register specifically in the consciousness as an intention, allows us to forget how tenaciously and by how many detours we learn this perceptive understanding and understanding perception that comes into play when we find our bearings as a matter of course at a crossroads.
While the image seems to have a primary form of existence in art, the word is enjoyed only secondarily as art, being familiar initially from the practical contexts of daily speech. In these practical contexts of the everyday, ambiguity is generally merely a difficulty that has to be unswervingly mastered; yet in art, increasingly so in the course of history, it becomes the purpose and goal itself. (In contrast, say, to painting in the Gothic period, more modern art no longer recognizes an unanimous iconographic meaning conferred, for example, on colours.) Set against the origin and the historical trend of the image, the lack of ambiguity of pictographs and traffic signs is painstakingly achieved by means of radical abstraction and conventionalization.

Also included in that invisible world that can redound to the embarrassment of the world of imagery are particularly complicated, causal connections – according to Hume's insight, cause is not a physical fact, and causality cannot be seen – as well as logical relations. In the face of the realization of subjects such as 'Hercules at the Crossroads', the medium can still confidently be credited with the 'or' of exclusive disjunction ('either ... or'). Negation, however, in the understanding of the Port-Royal Logic, already encounters a significant difficulty. How, for example, can we show in a picture the simple fact that a car is not blue? To represent the vehicle simply in another colour, say green, would not provide what we need. We would then simply have committed ourselves to a different particular colour, something that was not contained in the negated statement. Could we adopt the suggestion of denying the content of the picture by putting a line through it? In this way, a symbol of negation would be used within the image system. But we would then be leaving the sphere of the imagery: in contrast to the car that has been drawn, the line drawn through it does not depict anything. And even if we were to let the suggestion stand, again the problem would not be solved. For we want reference and scope of the negation to be marked in a way beyond potential misunderstanding. But how could we make clear exactly what is to be negated? That is, in this case, how should we add the crosses or strokes to indicate that the car is not blue? A cross above the...
car could mean all sorts of things and therefore means nothing in particular: the
car has not been painted; there is no car; no cars are allowed; and so on. This also
touches on the difference between describing and prescribing, which, instead of
being expressed by the immanent means of imagery, almost always has to be
learned in a conventional way or worked out from the context. (That prohibitions
and commands are given in round traffic signs, warnings in triangular signs and
simple directions in rectangular signs is arbitrary.) In the sphere of morality and
law, the difficulty of the pictorial translation of the negative recurs in the difference between what is ordered,
what is permitted, and what is prohibited. (A prohibition
is an order not to do something; permission is a negated
prohibition, thus implying a double negative.) The picture
suggests by its nature that what is depicted is the case,
and has difficulty as much with what should be as with
the modes, distinct from what is actual, of what is merely
conditional, possible or necessary.

Imagery, then, entertains only a loose relation-
ship with logic. Its looseness is linked with a feature of pic-
tures that can otherwise constitute one of their strengths: They neither possess a
discrete number of recurring symbols, nor can rules of the association of colour
and form be systematized (which is why universities and academies will presum-
ably not get anywhere with a ‘science of the image’ meant to be comparable to
linguistics in precision). Where the word classifies, the image creates transitions.
The traversing of the chromatic circle and the transformation of shapes gener-
ate infinitesimally nuanced continua. Where images dominate, from the sacra-
ment of communion to the video clip, transubstantiations and metamorphoses
of the imagined contents are produced that cannot even be conceived, or only
as absurdity, in the sphere of ideas that are linguistically articulated, separately
demarcated and classified.

Only language is discursive. This term is, however, subject to ambiguity.
The Latin word ‘discurrere’ originally means nothing more than ‘to run asunder’;
but in the course of the history of concepts the notion of discursivity has attracted
claims that extend far beyond the literal meaning. When we say that visual forms
are not discursive, we may simply have in mind that they present their elements not in succession, but instead simultaneously. A succession can, however, be characterized in very different ways, from a muddled sequence of impressions randomly superseding each other to an order where the course is directed by reasons. While the successive, in contrast to the simultaneous, produces only a formal concept of discursiveness, we can also define discursiveness in a sense that is more powerful and that encompasses its content by attesting to language the terms yes and no, for and against, because and although, either-or, both-and, agreement and contradiction, consideration and discussion. In short, the conflict of arguments would find in language its true medium, but in imagery, on the other hand, hardly more than a makeshift remedy. And in fact in a picture everything is as it is; but to discuss does not simply mean to represent facts. Rather, it means to relate them, by assertion and disputa-
tion, to what others believe and say. Images can present the character and configuration of objects situated in time and space in a way that would require an infinite number of words in order to evoke concepts that only remotely approximate the impression that the images aim at; yet even the most detailed pictorial representations generally first become an argument for something precisely when we say why what is depicted speaks in favour of or against something specific. A collection of images without words is not a theory, but a combination of words without pictures can be. As great as the merits of scientific illustrations may be, they are more a tool rather than the substance of the theory that they illustrate.

That the distance of the image from the sphere of argumentation is a disadvantage does not, however, go without saying. All who are tired of the endless verbal fuss will entertain a different view of it, and each of them will perhaps cut through it all with the comment: ‘I want to draw my own picture of that.’ They do not have to reach for a pencil to do so. The figurative meaning of that phrase still contains the promise of all pictures: to be easily surveyed. Thus people who save themselves the hard work of conceptual thought possess a well-ordered
worldview. The frame has always constituted the picture; it is a picture only insofar as it has a boundary, while words, pale shadows of the evidence of a visible shape, are tainted at each turn with doubts, reasons and counter-arguments that lead off into infinity. The boundaries that the picture brings with it do not convey doubt about its capacity. Rather, they suggest the power to bind the expanse of the world precisely within these boundaries. Conversely, the fundamental openness or (put in negative fashion) inconclusiveness of speech consists in the fact that it always provokes renewed responses. Pictures originate in the belief in giving, wherever possible, heightened presence to the object; words are reproduced from the constant distrust that the object has not yet been accurately described in its totality. If language also carries its own limits with it, then, in contrast to the frame of the picture, these in fact designate the limits of its possibilities, for example when someone says that a scenery is indescribably beautiful or that the horror was unspeakable.

The distinction thus drawn, which has made use of the material concept of the discursive, does not coincide with the practice familiar from both older and more recent media theory of distrusting the image as an emotional tool of appeal and of contrasting it with language as rational authority. Opposing the emotional to the rational already peddles little more than a stereotype; emotions such as anger and fear can be appropriate to situations in which we find ourselves and thus constitute the right reactions. Then again, images are capable of stimulating insight and of shaping the communication of facts clearly and unambiguously to an otherwise unattainable extent; the everyday experience of using an atlas, a guidebook or traffic signs testifies to it. Thoughtless, and thus indiscriminate, images, of which there may well be masses and masses, are no more an argument against the fact that images can be a cognitive medium than clueless verbal statements would justify a correspondingly negative conclusion about sentences.

The formal concept of the discursive apparently allows us to draw a line along which the benefits of words and images could be separated, viz., using the polar opposites of static and dynamic: If language is inherently a sequence
of words, a progression, then in a picture, in contrast, the process of becoming seems to have solidified into an ideal simultaneity. Time, that impalpable, invisible passing, eludes, one might assume, the image, which – as in Dalí – grasps in its place only the things that measure it, clocks (in order to alienate them into an ultimately static symbol of the dynamic). Only the current state, and not the process of change, would then find in the image its adequate means of representation. Yet this reflection, too, distorts the power of images. Assuredly inactive, constant figures, they have nonetheless never exclusively been copies of spatial relationships. Since the first cave paintings, they have also served as projections of succeeding time onto the coexistence in space. The temporal has, to use another metaphor, been translated into the spatial. By virtue of the appeal to the imagination that calls up what went before and what happens after, the temporality of things is not simply eliminated in this way, but also preserved. The cost of pictorial representation is certainly that viewers themselves have to complete the dynamic of the intended process from the tracks that the image lays for them. This cost to the viewers, however, is the flip side of a gain for them: what linguistic representation can only present in succession, the image compiles into simultaneity.

The reference to that alleged advantage of the serial medium of language over the parallel medium of the image, viz. the ability to represent processes, has been made obsolete anyway by the technical developments of the last hundred years. Traditionally, actions were frequently represented in sequences of still pictures. The comic strip today still follows the same principles that have been used for centuries in murals and frescoes in churches, for example presenting the story of the Passion as a series of stations, or in the pictographic dance notation since the 18th century. Film has only accelerated the progression, fooling human perception in its slowness. Sequences of static images and processes thus became indistinguishable to the human eye, which recognizes the illusionary character of the ‘moving picture’ because of its two-dimensionality, and not because of the speed at which it flies by.

In film, the image, which in days gone by was limited to synchrony, has captured a diachrony that is evident to all and sundry. Thus the imagination has been released from the effort that the still picture expects: to temporalize spatial relationships on the tracks laid down in the picture. The effort of the imagination
is replaced by the effort of memory to keep present what the previous pictures have shown. Movies in particular can lead us to compare word and image in a different way – different, that is, from the antithesis of static and dynamic. Pictures define, and have to define, what language, spoken or written, leaves open to the imagination. This may help to explain the oft-repeated disappointment of those who see the film based on the book they have already read. We must first insist that this comparison and the judgment derived from it gain their plausibility from the example of the motion picture and thus from a special case of imagery. Innumerable types of abstraction in pictorial representation contrast with it, stretching all the way to sketches produced with a few strokes and dashes. By omitting things such as the colour of the represented object, such abstraction grants imagination every freedom to paint them in. If we concede that images can be well and truly emancipated from any physical similarity with their subjects – and there are such pictures –, then there are no more limits that can be set on this form of abstraction and thus on the play afforded to the imagination. It would admittedly not be clear what expressions such as ‘depiction’ or ‘a picture of …’ would then mean. And it is hardly the task of the console on the dashboard of a car or the signage system of an airport to open up unlimited freedom to the imagination; quite the opposite: they are designed to provide freely selected actions with directions that are as clear as possible. In these cases, the intention is quite simply to limit the imagination.

Under certain aspects pictorial representations do not have to resemble what they depict in order to function as representations; maps on which different colours are used for motorways and country roads provide an example of this. Admittedly, the blue, red or yellow of the mapped roads that overrides the asphalt grey of their actual counterparts refers to one particular point of view; if cartographers jumped around in their spatial classification with the same freedom, their product would be worthless. And yet it is precisely in this respect that the sentence seems to be valid that language is capable of leaving facts undefined that cannot be left open in images. A picture cannot, for example, depict that two things are next to each other without defining which is on the left and which is on the right. In contrast, we might say in order to characterize this same constellation: the two things were standing or lying next to each other. The same
is true of other spatial relationships, such as ‘on top of one another’. Linguistic negation, too, leaves open what the affirmative case is, while the picture suggests the designation of the concrete detail, a designation that offers no equivalent to the negation – the case of picturing a green car where all that was meant was that it is not blue. If language is subject to less compulsion for detail, then it is the medium of greater economy. It can omit whatever may be unimportant in a particular context. Certainly, the sphere of images also enjoys degrees of freedom in indeterminacy, as is shown by the comparison of a painting that colours in every single detail with a comic strip in which objects such as newspapers are sketched out solely for the purpose of elementary recognition. But these degrees appear narrower than those of language. Pictographs can at least leave open whether the people that they address are wearing hats or not, or (unless their precise intention is to sort toilet users by sex) whether they are depicting a woman or a man. But they are already bordering on a sign language; after all, the word pictograph is a combination of image and word. Even pictographic abstraction, such as the choice of easily identifiable colours rather than the actual colours to label roads on a map, serves the purpose of clarifying rather than that of liberating the imagination. It is, after all, not a matter of indifference whether designers hanker after artistic creation right away or whether they spare us the perfidy of the object so that we can keep our heads free for what is actually worth paying attention to – real art, for example, and not the gewgaws of arty designers.

The compulsion to detail just described nourishes the suspicion that pictures remain wedded to something specific, and, conversely, that generality is a privilege of terms, thus of language. We are not only quicker when we say ‘dog’ than when we draw one; anyone who reaches for their pencil also always draws in a sense a particular dog – the dog that is depicted will have features that many of the examples subsumed under the term do not possess: it will have ears that are erect or floppy, its legs will be short or long, and so on. The context in which the

“...
picture appears can, however, indicate whether it is meant as a portrait of an individual dog or instead whether an abstraction from a dog’s individuality is intended (even if it necessarily communicates some individual features). An object can be represented not only in an indefinite number of pictures – as it also can be described and redescribed linguistically in countless variations –, but a picture can typically represent an indefinite number of objects. A picture of the *pinus sylvestris* in a botanical work is conceived as a representation not of an individual pine tree, but of any random example of this particular species, and is considered and understood as such. Apparently in opposition to each other here are only the individuality of the things to which the picture refers and the individuality of the picture which in fact may contain elements that are not present precisely in this way in any individual case – as if the picture had merely added one more tree to the countless others. But in truth, the picture has acquired generality *vis-à-vis* the individual pines. That generality is not so much a feature of the medium itself, *qua* system, as seems plausible for language; rather those who create and perceive images must achieve generality each time through acts of abstraction. Nevertheless, and contrary to what the example might suggest, such generality is not imposed on images contrary to their original sense at a historically relatively late stage, that of science. Rather, the act that refers images to whole classes of individuals, thus rendering them general, appears to be as old as images themselves. The prehistoric hunter did not draw a particular buffalo, but the buffalo – every possible buffalo is remembered, evoked, expectantly anticipated in the drawing –, in the same way as the drawn human figures do not stand for individual persons, but for every group of hunters of the tribe in the past, the present and the future.

Yet, all things considered: imagery, for all its capacities, meets its limits in particular when it comes to features that characterize modern societies. The image enthusiasm from the camp of the ‘iconic’ *rumbo* exhibits a dash of childishness:
excitement that producing and reproducing images are technologically feasible and work out ever more easily. The flood of images on all channels, then, is hardly backed up with good reasons. What triggers and drives it are reasons of marketing. For what the advertising industry has claimed for long remains credible enough: Images, given their potential to suddenly strike us, are prone to attract attention as well as to hold it through their variety; words, by way of contrast, tend to prove useful, as a rule, only when and if interest in a matter has been in place already. In a market economy, this will mostly determine whether designers, in a particular case, shall take recourse to images, to words, or to what sort of combination of both.

2 Iconic turn: die neue Macht der Bilder, eds. Hubert Burda and Christa Maar, Cologne 2004.
5 Antoine Arnauld, Pierre Nicole, Die Logik oder die Kunst des Denkens (Logic, or, the Art of Thinking) [1662], translated by Christos Axelos, 2nd edition, Darmstadt 1994, 29.
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Quo Vaditis Architecture and Design?

Architecture needs to relate to the big picture, to the person as a whole – not just the consumer – as well as the entire environment and its resources.

“Quo vadis Design” is a question, which is well applicable to architecture too. Firstly, because in the Anglo-Saxon world a large part of what we call architecture is subsumed under design – design professorships at faculties of architecture now operate as “design studios” – and, secondly, because in the last few decades the design of building structures and surfaces has increasingly come to the forefront as media, and the related “iconic turn,” have come to dominate the reporting, and in many cases often virtually determine the reception that architecture receives.

Architects have undoubtedly attempted in every era to mark their constructions as their work, to give them a kind of signature and to design their buildings in such a way that they stand out from their surroundings and are easily recognizable. This is again true both of private and public building owners, as both of them will often want a building that is significant or that unmistakably represents their pretensions. In his influential book “Learning from Las Vegas”¹ (1972) Robert Venturi categorizes all architecture as either “ducks,” where the whole building is an eloquent image of its function, or as “decorated sheds,” where the functional structure is separated from the significant graphic symbol. This categorization has
particularly promoted a conception and presentation of architecture in which the
design of images has supplanted the layout of spaces and functions. Ultimately,
this serious change compared to earlier forms of “designed” architecture is based
on an ever more insistent transfer of the principles of capitalist and media mar-
kets – corporate design, innovation, trademarks – onto buildings. The composi-
tion of structures is subject to the marketing strategies both of the architect and
of the building owner, with the result that architecture is increasingly becoming
a graphic symbol or logo. At its most radical, this process has long been put into
practice at gas stations, those purely commercial buildings, where brand names
replete with signal colors are placed at the heart of the built environment.2

Added to these marketing strategies is the fact that principles of the
visual arts are being translated and turned into absolutes in the field of architec-
ture. “Architecture as art” means that the architect attempts quite deliberately
to erect a singular work that not only has a distinctive character, but that stands
out precisely because it creates the impression that it is totally inimitable and
no longer caters to the traditional requirements of a building. Both design and
functional elements and premises of the construction are intentionally ignored
or turned on their head. Kenneth Frampton, one of today’s leading architectural
historians, has accurately described the background to the pseudo-artification of
architecture: “The speed and mass of information favors style and spectacle. Guy
Debord earlier on commented on this in his illuminating text ‘The Society of the
Spectacle.’ So we can observe in contemporary architecture a certain power of
expression of the surfaces with digitally generated repetitions of all kinds. The
result of the sculptural work of Frank Gehry, Zaha Hadid and others represents
a suppression of the spatial and tectonic articulation of a building structure. The
reason for this seems to have been provided by the pluralistic individualism of
contemporary art. […] The media always highlight the artistic spectacle – as it
is performed by Zaha Hadid and her 400 associates. It is spectacular, but there
is nothing behind it. I also ask myself what there actually is in the buildings of
Herzog & de Meuron. Generally, however, there isn’t even any interest in what
lies inside these structures.”3 The spatial art of architecture thus abandons its gen-
uine nature in this way and turns onto the design of easily remembered images
and sculptures.
From these two developments – the subordination of architecture to market principles and the pretension to art – emerges an architecture of trademarks and graphic symbols, for which the tasks and obligations that previously applied no longer have any significance. As an object of design and art, architecture detaches itself from content and function. Thus, for example, the Elbphilharmonie, a concert hall, is designed to look like a ship, and in the Bibliothèque nationale de France built by Dominique Perrault we no longer find books, but readers underground, while the collections are housed in sundrenched glass towers. The function and meaning of a building are literally turned on their heads, if its design makes publicity-generating headlines in return. Even more problematic is the detachment of architecture from its context, for the exclusive concentration on itself produces only solitaires as, e. g., in the buildings of Libeskind, Koolhaas, Hadid, Gehry and Coop Himmelblau, which destroy every urban context. Trademark architecture as a governing principle of composition means that the surroundings are regarded, as in a market, as potential competitors and thus have to be trumped or negated, respectively.

The function and meaning of a building are literally turned on their heads, if its design makes publicity-generating headlines in return. The combination of the interests of art, market strategy and media, however, entails not only the destruction of the city as a result of the dissolution of spatial references and thus also of human urban qualities, but also a waste of resources, for the sensible economic use of material is subordinate to the design of graphic symbols. The best example of this is the Olympic Stadium at Beijing, the “Bird’s Nest” designed by the architects Herzog & de Meuron. When a stadium roof cantilevers out 30 meters, then in a construction that is economic and sensible in design terms the proportion of the dead weight to the total load will be 25 per cent, meaning that one quarter of the load bearing capacity of the structure is used up by its own weight. In the Allianz-Arena in Munich, also by Herzog & de Meuron, the proportion of the dead weight is 65 per cent, while at the “Bird’s Nest” in Beijing a quotient of over 90 per cent has been achieved, or
in other words, not even ten per cent of the massive weight of a total of 45,000 tons of steel is deployed for the load bearing function; everything else is decoration. In a facility erected using traditional construction methods, approximately 4,500 tons of steel would have sufficed; in Beijing, 40,000 tons of steel do not perform any load function, but serve only to bear its own weight. From the BMW-Welt in Munich, through the Metropol Parasol in Seville, to the skyscrapers in what was once a desert in Dubai, similar examples of architectonic unreason and a waste of resources have piled up in the meantime. It is not a question of content, function or construction, but only of “icons,” of creating images that can then be celebrated in the media as new “landmarks” without a trace of reflection on the consequences of such hubris.

The dazzling concept of ‘innovation,’ which can be used as a benchmark generally only for fashion products with a short sell-by date, has become an almost fatal yardstick for architecture and design. The idea that something new has to be created over and over again and at all costs, something that is set apart from the “old,” leads to the compulsive production of forms for the sake only of variety and marketing. It would be sensible, on the other hand, to ask which elements of a product to be designed require new forms and which can possibly be retained or only have to be expanded or developed. It was during the Deutscher Werkbund exhibition held on the Weissenhof Estate at Stuttgart in 1927 that Josef Frank, the Austrian maverick who accompanied the Neues Bauen (New Objectivity) with wise and critical reflections, asked as early as that the question why the simple household appliance that had fulfilled its purpose perfectly well for centuries now suddenly had to be given a new form. He called the need to design properly functioning objects differently simply because the surroundings had changed “a problematic occupation with unproblematic things. Our furniture and our appliances

“The idea that something new has to be created over and over again and at all costs, something that is set apart from the ‘old,’ leads to the compulsive production of forms for the sake only of variety and marketing.”
no longer have anything to do with the forms of the house, because they are built differently for other purposes. Whoever transfers to them the forms of architecture, no matter whether these forms are old or new, is working in the spirit that has placed palace moldings on wardrobes. [...] You cannot ride in the chariot of Achilles today, just as you cannot ride in Napoleon’s, but you can sit on their decorated armchairs.⁶

The distinction drawn by Frank can be applied to contemporary design and to the question “Quo vadis Design?” How much in the industrial design products of today originates only from voguish changes of form, and how much is shaped by functional, technical, social and aesthetic requirements? If we look at today’s world of modern products, it seems to have been conceived with an extensively global uniformity in the sense of an “International Style.” That means that modern design has in many cases reached the stage of classical modern architecture, the goal of which was to appear as far as possible with the same “identifying marks” everywhere on the planet. In the last few decades, however, there has emerged in architecture an avoidance of this globally undifferentiated design, which Bruno Taut as early as 1919 termed as “formal superficialities” that were being poured out like “a diluted rehash” across the whole world.⁷ Context has increasingly become the most important reference point for the configuration of structures, for designs should be different in the cultural circle of subtropical India than they are in Japan or in a region of Northern Europe. Following on from that, the question can be asked whether a differentiation based on context and culture would not also be appropriate in the design of many products. In other words: Does an electrical kitchen appliance or a television set have to look the same in every corner of the world, or is this uniformity simply a result of mass production and marketing strategy? Perhaps a specific design could be developed for many modern products from the specific cultural context, if it were acknowledged that contextual differentiation, and thus references to individuals, tradition and history, can be more important than global homogeneity, which is subject only to changes in fashion. An approach to another design concept could also involve investigating, in the sense implied by Josef Frank, which products are “seating furniture”, that is vary by design only in line with the market, and which products are “vehicles”, the technical development of which requires a new design.
For both architecture and design, it is important that they should relate to the “whole human being”, i.e. both are part of communal life and must also for that reason integrate themselves, just as the individual has to, into larger contexts and into the requirements of the community. This will mean for the training of architects and designers that they should learn how to integrate themselves, where necessary also subordinate themselves, and that they should learn that context can be more important than originality, but also that historical contexts can be more important than allegedly “innovative” design, furthermore, that sometimes even a reconstruction will be the best solution, because a continuity that is important for society can be reacquired as a result. The modern education of architects as well as of designers is oriented too much on role models who want to earn a profile through rituals of innovation; only a few architects, such as Álvaro Siza, have set themselves the task of “building with history.” Human beings acquire their identity, however, exclusively through memory, which is from history that is added to the present on a daily basis. Context and history are therefore more important for architects and designers than poorly understood “innovation” and “originality”. It is on this basis that a new course could also be set in answer to the question “Quo vadis Design?”


Impressions
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Quo vadis Design? – The Whole Is at Stake

My principle argument is that following a boom in systems theories in science, there is now too great a focus being placed on analysing systems and their failure rather than on identifying the contributions of individual elements within these systems.

“The Whole is at Stake”. This is the somewhat ambiguous title that the former President of the Federal Republic of Germany Horst Köhler gave to his speech at the University of Notre Dame in Indiana at the invitation of the philosopher Vittorio Hösle on the lessons to be learned from the international financial crisis. And after the bankruptcy of the Lehman Brothers investment bank in 2008 “the whole” was indeed at stake. Even in day-to-day politics, it seems suspiciously often the case that “the whole is at stake.” And it appears that once again “the whole” is at stake when it comes to design. At least this is a conclusion that could be drawn from the symposium Quo Vadis Design? When there is even talk of a new “design” to financial markets, the banking system or the Eurozone, then it seems that there are no limits to the “crossover” from the design of the Burj Khalifa and the IMF discussions hosted there to the design of a new global economic system. In the field of design, as in the reorganization of political, economic or other types of systems, the professional designer – like the analyst approaching the matter from the outside – is often confronted with a question that appears so self-evident that it is hardly ever asked. Does design have to meet an ethical standard; indeed is it even able to or supposed to do this? And, if yes, what is this ethical standard?
On the moral competence of designers

This leads to the age-old question on the relationship between the person and the deed, the artist and art. Is the work primarily the product of a system or process that is as complex as it is anonymous, or does the result of every artistic, political or economic endeavour depend mainly on a talented individual, often working in collaboration with others? Who can name the architect or designer of, for example, the Burj Khalifa or the Internet? Why is it easier to say who painted the Sistine Chapel or invented the light bulb? And why do we talk of a “European Central Bank architecture” or a “new design of the Eurozone” without specifically naming, indeed being able to name, its architects and designers? Is it because they do not even exist as individual persons, or is it because those individuals would then stand out, be identified and thus held accountable?

It is true that systems – in the sense of the Greek systema as something composed of many parts – use processes to assign objects to their place and thus put them in relation to each other, and by doing so enable their functionality and indeed even make it conceivable. This is necessary and, in the Luhmannian sense of “society” as a complex system, it is also indispensable – just as it is in a major architectural project or in an industrial design.

But it is also true that through the increasing emphasis on systemic complexity the specific contribution of an individual’s actions to a product or to an overall result has become increasingly difficult to discern – no matter whether intentional or not. This becomes a problem when human action becomes indistinguishable from systemic action, since freedom and responsibility, duty and dignity then have to be attributed not to a natural person but to a legal entity, which for its part however is incapable of morality. (Incidentally, it is for this reason legal entities can be held liable under civil law, but not under criminal law.)

This system-immanent problem of a primarily systemic mode of thinking can be illustrated not only by means of recent conflicts surrounding major construction projects or industrial designs, but also and especially by means of the current financial and banking crisis, where the collapse of a single investment bank in September 2008 was quickly, possibly all too quickly, declared to be a systemic failure, a general design error in the architecture of the financial system and thus, at least in its outcome, something very similar to a natural disaster. This kind
of thinking disguises any form of individual accountability or responsibility, something that no reasonable person could consider a desirable state of affairs.

It is no different for the field of design being discussed at the Frauenchiemsee Conference. Should the designers of an iPhone be held accountable for how their design has fundamentally altered the nature of communication when, say, it is precisely their successful mobile phone design that is contributing to the increasing social isolation of its users? Behind all of the innovation inherent to this sector are the age-old questions about act and omission, responsibility and freedom. The systemic problem here is what is to done when we are even unable to clearly identify principle and agent, those that act and those that fail to act.

Quo vadis Design? – Thoughts about professional ethics
Quo vadis? What should “design” and its all too often anonymous designers do? What are they supposed to? And what responsibilities, beyond meeting legal requirements, do they have? Is a bank allowed to do more than its shareholders are? Is a state allowed to do more than its citizens are? These classic questions were raised anew in this conference on the future of design in particular. An answer can only be meaningful, however, if we find our way back through the underlying processes to a principle that was already part of Catholic social doctrine: the principle of personality. The fundamental question of ethics formulated by Immanuel Kant did not read, for example, “What should we do?” or “What should the system or the state or the team do?” but “What should I do?” In this ethical perspective it is first and foremost the individual that is responsible for the actions he or she undertakes. The bank, the company, the Internet, the tallest building in the world or the system or the design are neither good nor bad – only natural persons are capable of morality, identifiable human designers whoever they may be.

But how are we to deal with this insight in light of the fact that though a car company does have a chief designer, it has at the same time a board of
directors with a CEO and a CFO that advise and sometimes also direct this designer, and that many other employees are working for this designer. All the customer is interested in is the product, the design, the car, while those that design it and thus actually bear the responsibility for it are nameless and legion?

In a society predicated on the division of labour and in the apparently systemic complexities of, for example, a manufacturing company and one of its major retail customers, it is difficult – at least from the viewpoint of the end consumer – to interpret these different interests. We are faced here with a dilemma and not a problem. But what then is a designer supposed to do in this situation?

An initial response is that the designer should be aware that these situations involve in fact ethical dilemmas, since many people do not recognize them as such in the first place and instead – if at all – assume that there is a solution. As a consequence, their solutions often involve an attempt to relativize their ethical responsibility, for example, by advancing supposed “practical constraints”, the argument of arms dealers (“If I wasn’t doing it, someone else would be.”) or the problematic construction of “equality in injustice” (“But everyone is dodging fares!”). Of course, this changes little in their ethical responsibility.

On the contrary, just as ignorance is generally not a defence before the law, such ethical misjudgements seldom preclude the duty to assume responsibility. Thus the reply to a designer who seeks to pardon himself (a ploy that fails from the start, as one can only ask others for pardon) by saying that he only acted as part of a team, on the orders of the CEO, or out of financial necessity, is that all this changes little in his ethical responsibility for his personal conduct – whether he is a designer, a professor, a politician or a family physician.

In the field of design, the creative character of the work adds a further element from the perspective of the designer, that of the evaluation of individual performance and motivation. While 100-meter sprinters are obviously measured by their times and pieceworkers by the number of defect-free parts they produce...
or process, in the creative field – whether a designer or a visual artist – it is more difficult to quantitatively measure both performance and possible harmful consequences.

The reason is that design processes are increasingly executed on a collaborative basis according to rules of modern management, while many creative and artistic professions maintain what Plato describes in Phaedrus (244a–245b) as a necessary degree of *mania*, of productive madness. Especially in the design process, the design can only be separated from the designer with some difficulty, even when the designer of a vase, a car, or an iPad is identifiable to the user merely in the form of the product that has been created. In contrast to a signed painting, the Nutella jar does not bear the signature of its designer. As a result though the quality of its design can still be evaluated by an external design award or in an open design competition, its origins and development are almost completely shrouded from view in modern industrial processes. For, as already mentioned, modern design processes are increasingly collaborative workflows, often performed as contract work, while the path to becoming a trained designer is, even in Germany, increasingly an individual one.

However to use this to justify the possible harmful consequences of one’s own products, to settle disputes about intellectual property, or even to completely reject ethical standards with a reference to the collective liability of a company or a peer group would mean failing to fulfil the necessary condition of human action: A specific individual is responsible his or her specific actions. When an airport or railroad station is being built, there are building control surveyors and a board of directors, but that does not automatically absolve the architect, in the face of economic or other constraints, from the responsibility for a runway that is too short or a railway siding that cannot be used. How then are dilemmas of this kind, which repeatedly arise in the field of design, to be dealt with in practice?

Responsibility of the designer as an ethical dilemma

In contrast to the technical term ‘problem’, a dilemma does not allow for a positive solution (“Imagine you have only time to rescue one person from a burning house. Your aged parent or an unknown child. Which one would you rescue?”), but the person confronted with a dilemma has the possibility, or in Kant’s view the duty,
to accept the challenge by first structuring it and then weighing up the rival benefits before reaching a decision on the action he or she will take. One of the key difficulties thus faced by a designer lies in not realising or expecting that she will find herself in an ethical conflict, and so not seeing herself as subject to ethical duties.

For example, the members of a team of product developers involved in the design of a new airport or a new iPhone will, due to the collaborative nature of their work and the systemic responsibility of the airport operator or the mobile phone company, either not even notice or not want to accept that as identifiable parts of the production process each of them has a personal responsibility for his or her actions that extends beyond complying with existing laws and regulations. The ethical responsibility of such designers may indeed be less than that of their direct client or the company they are working for, but in the majority of cases it is nevertheless there. To recognise that such situations involve a dilemma, instead of pointing to systemic errors, economic constraints or contractual sanctions, as so often happens, and thus delegating or shifting responsibility away from oneself, is the fundamental condition for any ethical action.

In most cases this recognition on its own does not of course provide any simple solutions, but it does help choose the “least worst” option from the several options that have been identified in a dilemma. For the recognition of one’s own responsibility – even if it stills appears small – is a condition for investigating and actively searching for the possible options for action. In many cases individuals consider only two alternatives instead of the many possible options for action, or they even believe that there is “no alternative” to a particular course of action.

And those people who believe there is no alternative will rarely see that leaving office or changing jobs is a conceivable alternative or even an option – admittedly as an ultima ratio with potentially unpleasant consequences. Thus the fact that an individual recognises that with regard to her own personal actions the question “What should I do?” is an ethically crucial question and that she attempts to answer it responsibly is already prima facie a beginning to her assuming responsibility – whether on the basis of the Golden Rule, a categorical imperative, a Rawlsian theory of justice, or by considering the extent of one’s own freedom of action. Someone who asks this question will have to accept that only in the rarest of cases is there categorical collective responsibility.
The theologian, philosopher and physician Albert Schweitzer, himself “not only by nature but also on the basis of experience and reason a born and sworn opponent of any form of collectivism,” expressed this relation after the First World War in an oft-quoted sermon in Saint Nicholas Church in Strasbourg on May 4, 1919: “Man may never cease to be man. In all of your activity, you may never be an impersonal energy, an organ of execution of some sort of thing, an agent of society, you must rather set your own personal morality over against that in all things, however embarrassing it is for you, and try, in everything you must do, to act according to humanity and according to your responsibility for the destiny that you are preparing for another person.”

Schweitzer, a Nobel peace prize winner, summarized his basic problem with understanding anonymous systems, amorphous societies, as well as faceless and thus generally unaccountable organizations as collective entities as follows: “Were not many organizations that we had created to counter the poverty of the time almost like idling mills? Every organization, including those that have charitable goals, is in the long term only worth as much as the tireless human energies within them, for the personal initiative, the varied and adaptable power of the individual, is the element every real achievement is built on.”

At this point, Schweitzer is not abstractly speaking of society as a whole, nor of its collective rise or fall, but of the individual, the person as conditio sine qua non for the assumption of responsibility. A person must never be absolved from ethical responsibility for his personal conduct, even if he has acted in the apparent interests of a company, a society, or his colleagues. No concept of order, no postulate of the common good, and no economic constraint releases the individual person from this moral responsibility for his or her action.

Quo vadis:

The path from the macro to the micro level of the design profession

How do we now get from such seemingly high standards of a Nobel peace prize winner to the ethical obligations entailed in work contracts or in the unfortunately increasingly precarious employment relationships in the field of design? The answer is by applying these categories to the everyday dilemmas and everyday problems of the design profession, as they are faced by individual designers
that are fully capable of making moral judgements. Needless to say, it would be naive to believe that this profession was different than any other in being subject to many higher level constraints. This does not of course absolve us from ethical responsibility for our own actions. The generally formulated question “What should I do?” leads to a number of more specific questions:

- Who am I exactly working for and what are the contractual conditions of this employment?
- How do I deal with intellectual property rights over and above compliance with applicable laws, and what professional standards apply for handling my intellectual property rights?
- How does my company deal with artistic freedom and freedom of opinion over and above its protection in constitutional law, that is, as a part of labour law and the freedom to choose and practice a profession?
- Are the terms governing business and liability in my specific professional environment not only consistent with the standards of legality but do they also appear legitimate to me? What legitimate claims do I have towards my employer, what claims does my employer have towards me, and what claims do our customers have towards us?
- What specific responsibilities do I have, as a member of a team, for my individual contribution to our work? Am I appropriately remunerated, that is, do I earn a “fair wage” in which the work I have performed receives a commensurate compensation? And am I prepared to grant this right to others?
- Do I respect the dignity of third parties in all stages of a production process, also by assuming responsibility for the consequences of my actions? Conversely, is this also the case with regard to my dignity? Does the principle of reciprocity apply to my work?
- And as the litmus test for the designer: Would I – irrespective of data protection rules – have a problem if my name appeared on all of my designs? Would I accept being held personally accountable for my work? 

This list of questions is not exhaustive, and yet we could already raise the objection that no such employers or designers exist – or indeed could exist – that would satisfy all of these criteria. That may well be – as with the injunction to love
our enemies from the Sermon on the Mount – but those who accept the principle of personal responsibility should at least be willing and able to identify, using these kinds of questions, the ethical dilemmas that arise in their work and attempt to resolve them appropriately.

To answer, on the contrary, that remaining in a company that ignores or deliberately violates all of these principles is “the only alternative” because after all a person has to earn a living comes up just as short as the argument of the fare-dodger that everyone is doing it or an individual employee can do nothing about the failings of a corrupt system. From an ethical perspective, there is “no equality in injustice”.

At the end of my reflections on the importance of assuming ethical responsibility for one’s own actions, let us consider a particularly effective idea concerning responsibility in the diverse and varied profession of design. In ancient Rome, the architect responsible for the design of a bridge had to stand under its arch when the capstone was put in its place. This would be prohibited today – for reasons of occupational safety – but this test of a person’s readiness to assume responsibility for his or her own actions does not, in fact, seem so unreasonable.

3 A. Schweitzer, loc. cit., 113. Emphasis in the original.
Prof. Wolfgang Sattler (*1956 in Lauffen) has been a professor of Product Design in the Faculty of Design at Bauhaus University, Weimar since 1993. From 1983 to 1990 he was a designer and consultant at Corporate Identity Olivetti in Ivrea and Milan (Italy). He also taught at the Berlin University of the Arts (Faculty of Design) from 1983 to 1991. In 1990 he founded a design agency focusing on industrial design, exhibition planning and interface design.
Quo vadis Design?

Meaning outranks the importance of function.
Design gives things a purpose; it makes things understandable.

Currently, around half of all graduates which are leaving the Universities of design are working on products, services and forms of interaction that simply were not existent five years ago. Anyone now starting their studies in design can count on facing a few surprises. Hardly any other field has been so dramatically marked by a transformative momentum resulting from the influence of new media, digital tools, innovations in materials and production, and the virtual interaction scenarios and networks as design has been. Knowledge transfer and interdisciplinarity determine the complex process within design and production, just as they happen in research and development. We now find ourselves in the middle of a creeping digital revolution, the effects of which are incalculable. Questions about intellectual property, intuition and inventiveness are lagging behind the strategies of swarm intelligence and the boundless availability of information.

Questions
Against this background, it is more than justified to pose the question about the future of design and design education. The field that is described and designated only in general terms as “product design” is facing major challenges in the 21st
century, mainly in its core areas of industrial design, interaction design and universal design. From a very practical point of view, the entire product world will in fact have to be designed in a sustainable and benchmarked way under the conditions of resource efficiency, barrier-free accessibility, innovative forms of communication, and concepts and solutions that are suitable across generations and demographically inclusive (universal design). Only institutions, companies and service providers that are moving in this direction will find success and be able to hold their position while facing competition.

Highly trained designers and product designers will therefore also be relevant in the future.

Skills and knowledge in the areas of “analog + digital tools,” “human-machine interfaces,” “material and environment,” and “design and management” are expanding at a searing pace. The integration of design in dynamic social structures and urban living environments demands a willingness to adapt to new fields and structures of work. Future industrial design can no longer be imagined without cooperation in intercultural teams, an understanding of information technologies, social sciences and multidisciplinary approaches.

The set of tasks for designers will therefore become more extensive and complex. The importance for the economy and civilization of excellently designed and sustainable products will be recognized by ever expanding circles. Significantly more will be demanded. What does the design process actually look like in the digital age? The responsibility of design and the teaching of it will also become significantly greater. Faced with this form of transdisciplinarity, designers will have to be educated in particular through a interdisciplinary approach.

No wonder, then, that numerous colleges have embarked on debates and conferences with the aim of exploring the future course of the design and its disciplines. Two essentially different developments can be observed here. One
camp is attempting to foster ties with art. The other is trying to build bridges between design and science. The prospect for design in both cases would be to turn away from applied, practical functions and to develop in the direction of primarily self-referential forms of expression. In order to do this, however, it will require a clear and firmly rooted vision of what design is. In times of an ever decreasing existence of a discipline that is in the very process of losing its identity, this seems like an incredibly tough challenge.

**Every everything is design?**

At the same time, design is increasingly developing into a platform of debate. There has been a flood of publications, conferences and theories devoted to positioning design in the cultural sciences and to connecting it to science and related technologies. With a fine sense of the dramatic, all of this is taking place in the shadow of a global crisis that requires all problems to be incorporated from an ecological, economic and social perspective.

Are colleges and universities well positioned for this? Are the right questions being asked in design education? Or are the design schools and academies training their students for a job profile that no longer exists in practice? Posed by Nick Röricht at the former HDK Berlin\(^1\) 30 years ago, this last question is more topical than ever before. Are we dealing here with a blind spot in design education? “Design isn’t even teachable,” stated Hans Gugelot at the Ulm School of Design in 1962, and more than 30 years later, Ettore Sottsass asked the same provocative question at the foundation of the Faculty of Art and Design of the Bauhaus-Universität Weimar: “Can design be taught?”\(^2\)

How and where does design actually take place? What is design’s core competency, and how is it communicated? Designers work with models. They work on models that are still ideas and that have therefore not yet become reality. The relevance and the chance of change are tested on these models during the design process. A space full of possibilities and a clear ability to act emerges. This space remains a protected zone for failure, for trial and error. When reaching the core of a problem within this space, everything becomes quite simple within the design process; however if only the surface is scratched, it will remain difficult. In these spaces of heterotopia, in which the meanings and solutions are not
statically fixed, ideas and interaction scenarios can be investigated and related against the background of social change. Researched and structured, these processes are delivering quite unsatisfactory methods. “Design finds itself at the state where medicine was 200 years ago,” says design theorist Wolfgang Jonas.

What is the competence of design now? Although it is no longer a totally new concept, one of the keywords of the last few years has been “cross-innovation,” the ability to link processes, contexts and knowledge beyond the borders of institutions, companies, and actors, to develop totally new solutions and build prototypes using a multidisciplinary approach with existing expertise in the light of amended terms of reference and in an interconnection of the actors. The protected space of the university is perfect for this, and it sounds wonderful. But as soon as we leave this protected zone, everything starts to look different, and design ends up facing two sides. That is a very uncomfortable position to be in. Projects require robust support and networking.

The question “Quo vadis Design?” poses a truly wicked problematic. But it is precisely this wickedness that is proving to be the most interesting; everything else simply defines clear solutions for which we already know the answers. What the problem is, frequently involves asking the right question. And the way in which the question is asked frequently anticipates the answer. In my profession, I have to read and assess a great deal. Expert opinions, project reports, dissertations, jury contributions, art and design documents as a mentor on a PhD program, as well as conference papers and “white papers,” which describe scientific innovations in abbreviated form.

The subject of all these documents is always the draft, the design, the innovation, and the (pseudo) scientific part is often a written expectoration, massive padding that is an attempt at justification. Brilliant and talented minds write and expound to the point of mental exhaustion. In addition, most of them write new application upon new application with tremendous energy but with a low success rate – a huge effort by necessity, but one that ends up for the most part
with a document gathering dust at the bottom of a drawer somewhere. Generally the authors are not adequately trained for such writing, and the results often creates the effect of artificial mountains erected in a flat landscape. However the nonsense has a method and it is found within the system.

We evaluate and optimize at high speed until we reach a polar inertia, as Paul Virilio predicted several years ago. Would it not be cleverer to allow some calm to prevail here and to give more precise thought to the formulation of the questions, to reflect on their relevance, rather than raucously compose answers and justifications in an infinite loop? Design is a field of work and a field of teaching that deals with uncertainties and actually cannot be tidily packed up in a set of rules.

To structure design education as project-based study has in the meantime proved to be one of the most promising paths helping both to convey a practical focus and to lay the indispensable cornerstone for lifelong learning. From the lab to the project, as formulated by Gropius at the Bauhaus. As the founding dean of the Bauhaus-Universität Weimar, Lucius Burckhardt has consistently pursued this approach to reform the education of artists and designers. Project-based study has represented a leitmotif running through the working methods of all courses of study at the Faculty of Design since it was inaugurated in 1993, and it has increasingly become the model emulated by the entire university.

The focus of the education on social reality is implemented through forecasts and projections in art and design projects. The unique nature of the conditions, the formulation of problems and objectives, but especially the interdisciplinary approach in the processing of concepts and solution strategies lies at the heart of project-based study. Case studies provide a suitable framework for problem-oriented and practical learning. Issues of design are treated in depth in projects with a fixed time limit. The projects always deal with real, tricky, indeed “wicked” problem, and not tasks where the solution is already known in advance. Issues of design are treated in depth in projects with a fixed time limit. The projects always deal with real problems and not tasks where the solution is already known in advance. Any design academicism that may arise here must be consistently avoided. Project-based workshops and specialist courses offered together communicate the principles and implement the manual skills and techniques needed.
to put ideas and concepts into practice. The guiding principle behind this strategy is to teach technical and manual skills at the time at which they are needed.

What is crucial here is the posing of the question. However before we delve into “right questions” and “wicked problems,” let us first take a look back at the history involved. It was Horst Rittel who coined the phrase “wicked problems” together with Melvin M. Webber of the University of California, Berkeley. Rittel had studied mathematics, theoretical physics, sociology, and social research, and taught methodology, science of design and operations analysis at the Ulm School of Design. Rittel and Webber both examined the idea of “wicked problems,” which describe planning and design processes that involve a high degree of complexity. These are problems that cannot be dealt with using predefined approaches or model solutions, because the information that is required cannot be anticipated. What is needed to solve problems of this kind are methods and measures that accompany the problem-solving process and support the integration of different perspectives and information as well as the structuring of the problem space that is created.

It was precisely this theory that was later seen and further developed as the basis for project-based teaching and problem-oriented project-based study in the context of teaching design. Annemarie Burckhardt explained: “Wicked problems mean on one side problems where the question is quite simply formulated incorrectly, because they are based on inadequate or incorrect input information. On the other side, wicked problems include a series of questions and criteria prefixed by what is unknown or novel. What is important is that these problems cannot be precisely formulated, that there is neither an immediate nor an ultimate possibility for review, that they are new problems where possible solutions cannot be derived from the past and simply transferred to the future, that a linear division into true-or-false cannot be applied, and that there are several different explanations for one and the same problem. Modern teaching of design no longer focuses only on knowledge, but above all on dealing with issues. Teachers and students are together confronted by unsolved questions. The goal of the teaching is therefore not merely knowledge, but the ability to act. Teachers and students are confronted by unsolved tasks. The students have to learn to make decisions despite having incomplete and uncertain information available.”
Design and science

“… but faced with blatant brackets and footnotes he understood not a word, and when he painstakingly followed the sentences with his eyes, it was as if an old, bony hand was unscrewing his brain from his head. When he stopped, exhausted, after about half an hour, he had only reached the second page. And sweat covered his brow …”7

Designers do not have to be scientists! But what developments and evolution in design and design science will be necessary in order to go far beyond any current practice? With the promise of certain self-determination, “the project” has established itself as a working method for tasks with a fixed time limit and high complexity. May that be in economics, in politics or in teaching. Students are introduced to the variety of aspects within a topic due to project-based teaching and companies create a project management for future jobs. Project based groups have replaced the rigid team group, accompanied by a flattening of hierarchies. Here, the project corresponds to today’s concept in which each action, each topic and each task resides in a complex environment where once tried and trusted models no longer appear suitable.

Founded in Weimar in 1919, the Bauhaus tried with workshops and designated “laboratories” by Walter Gropius, to anticipate the reality of the future and to design the school in a way that could serve as a model for the conditions of production. However, it is only in rudimentary fashion that technical developments can be reproduced within the school, not to speak of the social changes. The teaching at the Bauhaus – from the lab to the project – thus also had a historical dimension, which corresponded to the changed perception of reality and the environment. In addition to the discussion of history, a debate on the science of the project also has to take place, this day and age. Standing at the centre is ultimately the presentation of sample works, as well as the ever evolving examination of the teaching and research of the project.

So what is happening now in research, what is the situation with design in science and the sciences in design? It is easy to characterize the differences that exist between science and design as polar opposites. But haven’t artists and
designers always sought inspiration in science and its theories to improve their practices, and haven’t scientists always helped themselves to aspects of the arts and design to back up their theories? The knowledge, structures and discursive logic of scientific endeavours seem to stand in opposition to the effortlessness, freedom and euphoria of art.

But don’t they nevertheless share fundamental common historical, cultural and even methodological ground that justifies talk of a productive interdependence? In particular, the central role that technology plays as a mediator between art and science shows that doubting the usual demarcation between theory and practice is permitted. The objective is to identify a historical and systematic axis, the candor with which the sciences perceive themselves and to highlight convergences both between design and science and between the theoretical, technical and practical spheres of life.

From knowing to acting to knowledge

How does knowing something translate into making something, and how does new knowledge emerge from this action? What set of methods in the field of design would enable these phenomena to be recorded and described in reasonably scientific fashion? What would this mean for passing on basics, and what would that mean for a radical realignment of design education? Design is not a science. Design is design! And designers can’t do everything!

Otl Aicher put it in a nutshell: “Design means relating thinking and making. Aesthetics without ethics tend toward deception. It is about development as a whole, not just about its outward form and pure technique.”

Design is an outstanding activity of human intelligence, and it also involves the most difficult task of seeing exactly what is missing or of seeing something that is there, but which no one has already discovered. This requires an often suggestive style of thinking and working that moves in associations and that, when faced with applications and solutions, progresses almost imperceptibly into

“It is easy to characterize the differences that exist between science and design as polar opposites.”
new avenues of thought. Intuition is then simply the ability to have a sense for the right moment. It is precisely this feeling that eludes the rational calculation of the analysts and their disciples. Knowledge is often already embodied in a design. What is important is to uncover and to use implicit knowledge. Designers face these difficulties, and at the commencement of a project it is impossible to know whether it will succeed.

Previously, design was primarily about the shaping of physical products. Today, however, designers deal with organizational structures and social issues, with interaction, service and experience design, and have yet to come to terms with highly complex and also in part very political problems. It is possible to speak in summary of a “system of objects,” to which Jean Baudrillard9 dedicated a book. Designers work today as applied behavioral scientists – a task for which they are woefully undereducated. Often, in the view of the American design theorist Donald A. Norman, there is a lack of understanding for the complexity of the problems. He believes that design schools have so far failed to make the scientific foundation, for example in experience and interaction design, a component of their teaching. Ultimately, the students should be taught about the “interlocking complexities of social behavior, how they are represented in the interaction of the behavioral sciences, technology, and business. There is little or no training in science, the scientific method, and experimental design. Related problems occur with designers trained in engineering, for although they may understand hardcore science, they are often ignorant to the so-called soft areas of social and behavioural sciences. They do not understand human behavior, chiding people for not using technology properly, asking how they could be so illogical.”10 What foundations are required in the teaching of design? Anyone who believes that the foundations of design will always be the same is thoroughly mistaken. Bauhaus and Ulm fall short of the mark. The design disciplines arrange and form themselves, and what Holger van den Boom postulated 15 years ago is becoming increasingly evident: the basic education at the design schools is facing radical upheaval.

We need new designers and we need new design scientists. We need people who are able to work with an interdisciplinary approach, who understand both human behaviour and business and technology, and who are well versed in scientific methods. And not to be forgotten here is how much knowledge also
depends on its presentation, its specific mediality. Within the traditional concept of scientific knowledge, it is language and in particular the form of proposition that dominates. The significance of the figurative as an instrument and process of knowledge appears only as an accessory here. Yet the flood of visualization strategies with which the sciences want to make the invisible, visible can no longer be denied. Their production of knowledge has in fact always depended on a large variety of visual techniques and methods, such as graphs, models, diagrams or illustrations and drawings, etc. These pictorial aids have hardly ever been considered or explored by the philosophy of science in their own mediality, their particular structure and form of presentation.

Dieter Mersch has taken this up as a theme: “Whereas discursive procedures work on the creation and verification of factual claims, the production of evidence falls to the visual processes. When we relate them to one another, this allocation of tasks makes clear how tightly the evidence effects of visualizations and the truth effects of discursive practices are intertwined in order to first make knowledge valid as knowledge.”

What innovative techniques and methods have been developed in the last few decades? In the design process, it is practical knowledge that shapes the ideas as much as the selection and application of methods. Implicit knowledge becomes explicit. The ideas are influenced by the design and also by the material and its limitations. Much of this knowledge is implicit, yet ideas would be different without the knowledge and experience that is available. The concept of “implicit knowledge” or “tacit knowledge” can be traced back to the scientist and philosopher Michael Polanyi. He, however, did not use the term “tacit knowledge,” but spoke instead of “tacit knowing,” which makes clear, far better than the oft-used expression implicit or tacit knowledge, that the interest does not lie primarily in knowledge, but rather in the “know-how”, not, then, the cognitive structures, but the mental processes. The focus is directed at the propensities

“Anyone who believes that the foundations of design will always be the same is thoroughly mistaken. Bauhaus and Ulm fall short of the mark.”
to perceive, take decisions and act, the forms appropriate to them of more or less intuitive performance regulation (knowing), the skills. It is first from here that in the “tacit knowing view” we can explore the relationship between explicit knowledge and this know-how. Polanyi’s hypothesis is that theoretical knowledge can never completely catch up with practical know-how. Indeed, he dedicated a whole book to the basic statement that “We can know more than we can tell.”

Playing the violin offers us an example that can illustrate this know-how. We can think and talk about this skill for a long time, but violin playing only becomes virtuoso when it is played with virtuosity, and the process in which that virtuosity is reached cannot be explained at every stage. Why a Stradivarius sounds beautiful has so far remained a mystery to science. That the explanation is still pending does not, however, mean that it is impossible! For the approach to research in design, it does mean that great value is placed on investigations into the act of creation, e.g. three-dimensional printing, rapid prototyping or usability testing.

What is key here is the systematic and critical investigation of a question, a hypothesis or a problem with the intention of discovering new facts, drawing new conclusions, developing new materials, processes or practices, and documenting this process with a view to generating new knowledge. It is here that design education faces radical changes. And when practice-based research is involved, the focus is additionally placed on proof of rigorousness, innovation and originality in its contribution to the scientific discourses. It is less about what the individual considers to be research than about what can be valid from an academic perspective as acceptable research. For designers the research process is a learning process.

What does it actually mean to express something that has never been expressed before, to conduct empirical work that has never been realized before? How can a synthesis of objects be generated that has not yet been compiled in that particular way? What is important is to adopt a new technique, to apply it in a new field and thus to use it in a cross-disciplinary way in relation to other methodologies. To test new knowledge in an original way may perhaps mean recording new information for the first time or applying new proofs to an old system. Who actually decides which practice of experimentation, of discovery and of criticism are valid from a design perspective and which are valid from a
scientific perspective? Can both sides of these practices and working methods benefit from the other side and provide each other with mutual inspiration? What might provide suitable structures and languages for such an exchange? What happens when the systems of design and science are hybridized?

In order not to fall into the trap of empty definitions, it is essential that the fields of design and design science are clearly separated. The question of how designers work is one issue. The question of what transfer methods are necessary to develop and employ in design science is another. What is important is that the joy of designing is not lost. In particular, the creative side of design is of critical significance when it involves the design of artefacts, interactions and services that not only function and inform, but above all provide pleasure. Design and designers must open up to and learn more about related sciences – sociology, psychology, behavioural science, economics – and natural and engineering sciences. But they may not become scientists or engineers in the process. Hubris of this sort is definitely a threat, and it is important to counter it with a self-confident position of one’s own discipline.

Designing in the digital age
As the machines of the industrial revolution changed people’s activities, so the digital revolution with its algorithms and the parameterization of workflows has radically transformed professional day-to-day work with far-reaching and unforeseeable consequences. Can we still trust our eyes and ears? Digital tools perform functions that we neither notice nor understand when we use them. We leave tracks behind us, and we are observed without noticing it. Usage has long since replaced comprehension. Interfaces alleviate only our anxiety about the black box. They merely simulate for the user an understanding of the underlying technical function. Smartphones and notebooks are robbing us of our attention and increasingly dominating our lives. The creeping takeover by digital tools is permanently changing our behaviour, our forms of communication and how we deal with knowledge and information.
It is not only scientists, technicians and programmers, but also designers who are shaping this transformation of life and work within the global knowledge and information societies. As almost all of the world’s knowledge is communicated through media and currently 96% of all data flows are secured digitally, the importance of these professional “digital visualizers” lies not only in the design of information, but in the design of real-life contexts, and this however throws up a number of ethical questions. What ethical principles are valid in knowledge and information societies? What constraints affect not only creators and designers, but also artists and producers of culture? Where is the line drawn between these parameters and ethical dicta such as social compatibility, democratic participation and ecological sustainability? What ethical commitments of the individual make sense in the global knowledge and information society?

The new information technologies have propelled us into a time of transformation and of a fundamental reorganization of cultural networks. We can compare the current cultural change with the transition from the oral tradition to the written word and from the written word to its printed reproduction.

“We no longer live in a space of centralized knowledge, but in a space of distributed knowledge, we organize our networks less and less according to a logic of concentration, but rather based on the principle of a variable topology. The exponential growth of the mobile communication market illustrates this perfectly. As a result of this change, new forms of personhood and new communication systems will emerge.”

We are bearing witness to a gigantic development and change. For 150 years, we have undergone a massive revolution: the detachment of information transfer from its physical transport routes. We are now witnessing how this process is accelerating, how two unequal systems, the analog world and the digital world, are swirling around each other in confusion, while at the same time increasingly coalescing with each other. The reason for this is described somewhat pedestrianly as an “Internet of things and services.” But it refers to a dramatic development of the Internet. Even today, physical objects – such as the computers of the international stock markets – communicate with each other faster than people would be able to. An ever-growing proportion of the human race has access to the Internet. It is expected that there will be around 7 billion Internet-enabled terminals.
by 2016. This represents a massive global system of interconnected networks that contains within it immense potential to change all our lives. In conjunction with the development and distribution of radio frequency identification, or RFID chips, everything and everyone can be networked with everything and everyone else. This digitalization also represents a world that has been made invisible.

“For the parallel world of codes, algorithms and programming has a message: You can no longer comprehend the big picture. The concept of “big data” now holds sway in this placeless space. The visual metaphors as we know them from scientific representations are no longer of any help. A universe full of infinite chains of code screeching around the world at enormous speed. That have to be carefully encrypted and just as laboriously decrypted again, that form the inextricable ambient noise of civilization and contain answers to all the questions that a secret service or a data company could ever ask. And in this placelessness wars are waged, secrets are stolen, life is changed, basic rights are scorned and billions are earned. This is an arena for initiates. And Google, Amazon, Facebook and the rest are the helpful data krakens.”

What we see is the interface at which code meets person. We stand here before a fundamental break in development and in how we handle user interfaces. For codes cannot be recorded with the instruments we previously used to describe reality. The world of the narrative is no longer present in the world of codes. The old world of pictures has nothing in common with the new world of codes. Where there are no images, there is also no conception of what is happening in the parallel world of programming languages. And whether it is worth relinquishing privacy and freedom is becoming an elementary fundamental question, with a dimension that is relevant for all of society. What does that mean for the working methods and practices of design and designers? What actually goes on in the head of the draftsman when, thanks to electronic archives that can be accessed at any time and from anywhere, we no longer have to occupy ourselves with the acquisition
and the management of knowledge? Things may become very tight for design and designers if we do not wake up.

Who is the author of an idea? What is an original? Which thoughts can we still assign to whom? “Knowledge is to information as art is to “kitsch”. “Culture is now counterculture,” says Jörg Häntzschel.¹⁵ For design and designers, this is an age of upheaval that is associated with very particular challenges, and exaggerated hopes of a technological determinism that sees in the Internet a motor for the promotion of autonomy and democratization, however they are understood, must be subjected to critical scrutiny. Despite everything, designing remains a heterogeneous process, the approaches and strategies which are often marked in the draft by one’s own experiences, sociocultural background and the prevailing technical and economic conditions.

The magic of what can surprise us always remains.
This was the Hochschule der Künste (HDK – Berlin College of Arts), which has in the meantime been renamed the Universität der Künste (UDK – Berlin University of the Arts).


Depending on the context, the meaning of “wicked” can range from “bad,” to “vicious” to “malignant”.

Horst W. J. Rittel and Melvin M. Webber (University of California, Berkeley) explore what wicked (tricky, vicious or malignant) problems are as opposed to tame problems in planning in their treatise “Dilemmas in a General Theory of Planning” in: *Policy Sciences* 4 (1973), 155–169.


Discussion
In answer to the question of which direction the development of design is taking, I would like to make reference to a central theme from my practical work in and with the discipline. While this purely practice-oriented perspective cannot be taken in isolation, I cannot help offering suggestions as far as theoretical questions are concerned – partly to express my personal hopes and wishes.

In their work, designers are increasingly doing more than just designing products or services; they are translators of the needs of users and organizations. The promise to conform to these needs with realizable products and services by means of solutions that can be discussed and implemented in the further development of the process is an increasingly essential part of the daily work of the designer. This is also a competency that no other discipline can offer.

As is the case of translation between languages, the discipline makes use of the necessary room for interpretation – otherwise the design process could be replicated mechanically. The ability to interpret grows from experience, which is
gathered in the course of projects for various clients from a broad range of industries and from cooperation with various specialist departments within the organizations with which designers cooperate.

A further parallel to the work of the translator is revealed in the designer’s role as an interface: Like interpreters, designers lead those who represent all the relevant interests to a common way of thinking, allowing them to communicate in the same ‘language.’ That allows us to help all those involved focus on the content – rather than the form – of communication. Unlike a purely verbal translation, however, design can draw on various levels of communication, e.g. images, models, sounds and smells, in order to transmit content. This transfer of knowledge from various sources into the form of solutions for the implementation of visions that can be discussed because they are concrete, visual and tactile is, in my view, the core task of the field – and should form the basis for future developments.

With regard to the future, this leads me to the following three major aims and wishes for my field: Firstly, even greater focus on the development of holistic processes for organizations that lead to completely new offerings and that match the needs of users and society as closely as possible while also helping organizations achieve their aims. Secondly, in order to achieve those aims, design must, of course, manage to address higher levels of organizational hierarchies, because the adoption of holistic processes involves many functional units and can only be implemented with the support of executives and the heads of the specialist departments involved. A further logical consequence is that, thirdly, I hope that in the future designers will be the people who found and lead new forms of organizations in order to optimize processes for an increased focus on the improved comprehension of content.

As already mentioned, the field of design acts as an interface discipline. Its reduction to the purely physical shaping of products, which is still often practiced, does not adequately reflect the true power of the discipline and those that work in it. Instead, in the course of their work, designers are already filling the gaps in communication between the various areas and specialist departments of our clients, in most cases without any explicit mandate. The translation competency is, therefore, already a decisive feature of good design and must, in the future, receive greater public recognition as a core competency of the discipline.
Design – does such a thing even exist? The intuitive answer: Yes. But, the one and only design – no. Design is an action, design is a state – we do it and, at the same time, are surrounded by it. Despite that, or perhaps as a result, the general perception of design often remains unclear.

A variety of self-images and interpretations give the term meaning – or do they make it amorphous? Is design really as diffuse as often thought?

If we are to answer the question of where design is heading to, we must first ask: What is design? Answers to that question depend on its context – there are many answers: design takes many paths, fulfills numerous purposes and serves many interests. So, simply speaking of design as a whole causes numerous communication problems. A need for explanation arises – it is a term open to the confusion of free interpretation. It can be taken to mean whatever is opportune at any moment. What is the core task to be performed by the designer, or better, designers? Is there a recognizable core that applies to many or most of the design-disciplines?
From icebergs to tropical islands

If you ignore the differences between the various disciplines and business areas in which the term design is used, then one common element almost always remains: the human being. As user, recipient, customer, target group and starting point: the human being is the focus of all the efforts of designers in their work. Design forms the environment – as an intervention in the field of application, in the living environment of the human being. In the best case, the aspiration is to offer suggestions for solutions that do justice to human needs in their perceptual and experiential environments. Design uses innovative approaches to research and development from the fields of engineering and the (natural) sciences in the service of human beings. By connecting technical and research methods from the humanities, design draws on the strengths of various specialist areas to take a transdisciplinary approach and thereby makes innovation available for new areas of application and for society as a whole. Design also promotes new technological developments by taking into account the needs and requirements of potential users and thereby acts as a driver of future innovation and social progress.

Design is capable of reviewing the qualities, potentials and limits of various social, scientific and commercial framework requirements of all agents and of methodically reporting what it discovers. It can also synthesize various approaches to finding solutions that can meet the needs of users, customers and humans under the prevailing technological conditions and commercial interests. As an essential element of product processes, design adds value in the context of production, markets, functionality and applications. Consistent improvements in the fitness and essential usability of products create the basis for economic sustainability and customer loyalty.

For those who are often called designers and are professionally engaged in a number of fields (e.g. interactive systems, exhibition media, medical technology, graphic design, research and teaching) design simply means hard, methodical work and precision. Only a very small part of this work relates to the role of shaping surfaces and forms, which is often hastily ascribed to designers.

(Re)shaping icebergs

The real role of design is far more differentiated: Design can only make a contri-
bution to the holistic success of a product if it can combine the wishes, aims and
needs of users with the commercial interests of producers and service providers.
Design must also be seen as a central element of the product development pro-
cess. The designer is responsible for all aspects of a product that come into contact
with, or are perceived by, the users – the human beings – or that affect the world
in which they live. That is why designers must describe and direct the develop-
ment of the qualities, functional extent and form that are unified in a product
and thereby create by drawing on the specific knowledge and cooperation of
various specialist areas – ideally taking into account social and ecological factors.
In place of often short-term one-dimensional approaches taken by individual
disciplines that can dominate the development process, the aim should be the
target-oriented and methodically grounded integration of the competencies and
interests of all those involved in production.

As the person responsible for all aspects of a product that affect the user
experience, the quality of human interaction, and the suitability of a product for
its intended purpose, the designer must be given a central role in all stages of the
product development process, from planning and development to production,
testing and marketing. Design produces qualities that go far beyond the mere
form and function of a product. As a product architect, the designer develops the
precise specifications for the product development and makes sure that they are
implemented accurately. The process results in a solution that anticipates the con-
text in which the product will be used and offers more than the simple aggrega-
tion of its technical components.

The top of the iceberg ...

In effect, the efforts of all those involved in the production and manufacturing
process are not visible to the user, and that is usually the aim. This allows highly
complex technical products that result from the design process to appear almost
necessarily simple. This is very much in the interests of users, because they are
generally not interested in the technical aspects of the product. Their interest in
using the product is generally limited to specifically formulated everyday prob-
lems. The usability of the product and its targeted applicability are the primary
aims. The process of developing the product and its technical aspects discreetly
fade into the background as a result of its simple form. However, the detailed
decisions made during the design process remain embedded in all aspects of the
product and contribute to the qualities of its usability. They form the basis of a
positive or negative user experience and thereby, not least, the social and eco-
nomic success of the product.

Let the palm trees grow!
Good design begins with a mission, a strategic position. The point of departure
can come in the form of questions: Why are we developing products (apart from
making money)? Which values, needs and topics do we serve? What added value
do we create for ourselves and for the users? What societal value do we create?

To render design as not being perceived as vain flirtation with smooth
surfaces and names, it is time that designers nobly step back behind their designs
and not pursue short-term personal aims or try to gain the recognition of other
designers. In practice, the work of the designer is a far cry from the stereotypi-
cal creative eccentric who is called in at a late stage of the product development
process to give the results an aesthetic touch. Design is primarily legitimized
by serving human beings, customers and by ensuring the social and ecological
sustainability of the production process within the cycles of production and use,
and not by short-term marketing effects. Design must use all and every strength
at its disposal to achieve these aims. This is the only way that design will be able to
appropriately fulfill its ever more important role as a leading force in our increas-
ingly technological world.

Who or what, if not design, can offer a vision and show the opportu-
nities for harnessing the technological and economic product processes in the
service of the human being?
Technological development makes it necessary to question our habits as regards communication. Computers have largely freed people from the need to process data and the constant development of intelligent digital systems have allowed technical infrastructure to become increasingly independent. Intelligent technical systems are now better and faster than people at the standardized, logical processing of information. That means people are increasingly engaged in the qualitative filtering of information and making decisions regarding its significance in specific contexts. Machines can neither simulate human perception nor the associated emotions. That means that the central future challenge is to integrate the perceptions of different user groups into automated data processing systems. Qualitative decisions, values and attitudes will play a greater role in that process than quantitative facts.

If designers can manage to change themselves and make sustainable changes in their field and communicate those changes externally, this shift will cre-
ate significant opportunities for design as a discipline. The debate about the connection between design and research has gained impetus from these technological changes and the increasing relevance of qualitative decision-making processes. In a time when technological development seems to offer us limitless opportunities to change our world, more and increasingly efficient decision making competence is required. Large numbers of options make people feel insecure and create the need for orientation. People need such orientation in order to feel secure and to allow them to explain their decisions to others and, where necessary, defend them.

Designers have always employed methods and competencies that allowed rapid decisions to be taken in the process of creating systems. However, the need to communicate such methods and competencies clearly to the largest possible number of non-specialist stakeholders, in order to create trust or to make decisions collaboratively with them, is relatively new. The challenge for the field of design, which is made up of a large number of headstrong leaders, is to follow an interdisciplinary strategy that appears consistent to outside observers and demonstrates the value of the range of competencies employed in the field of design. The efforts of numerous designers to communicate their methods and enter into dialog that allows external observers to develop greater understanding of their work shows that they are aware of this need.

Changes to the field of design initially take place in professional practice, because changes to the framework conditions are automatically reflected in briefings and exchanges with clients. Design agencies, which have to be flexible in the creation of interdisciplinary project teams and are not forced to follow set processes, are especially quick to respond to these new challenges. If there is less demand for work that follows standardized processes, and increased demand for decision-making competence, then employees with suitable profiles are taken on, and those whose profiles are no longer in such strong demand are motivated to develop their skills.

As the focus of professional practice has shifted from traditional industrial design to interactive or transformative aspects, the demand for people with the ability to train others to meet these demands, and adapt course planning and educational aims and formats accordingly, has grown. For graduates to find suitable employment after they complete their studies they must already have mas-
tered some of the required competencies, giving them the ability to effectively support existing teams.

Interdisciplinary differentiation between product design, communications design, interaction design, service design and many other fields seems to be obsolete as these areas are forced to work together ever more closely and effectively. For example, a user experience can result from a combination of the physical form of a product, digital interfaces and the logic of the invisible processing systems that make up the underlying technical system. Commonalities in terms of design, behavior and working processes are becoming increasingly important in allowing these elements to interact productively. The aim should be to define core competencies of design, to promote increased awareness of different profiles and to develop mutual appreciation.

That is the only way to offer stakeholders with different professional backgrounds a consistent picture of the value created in the design process.

1 I have discussed this at length in: Hirsch, Sandra, *Gestaltung und Umbruch, Industrie Design als Mittel sozioökonomischer Wert schöpfung*, Hamburg 2014.
Seeing design as a social and political force\(^1\) is completely consistent with the traditions of the old school and is more important today than ever before – not because the shape of the product, the form as such, calls forth the social form, but rather because of its application and interpretation in the concrete and abstract systems created with it. Our relationship to “sustainability” is an example of the significance of such opportunities for design, and the subject is often considered in terms of design. This demonstrates that the task of analyzing global problems and effecting a change in the way we think and act in general and applying that in specific detail is ascribed to design, and that the field is considered capable of driving such changes. However, the example of sustainability also reveals the reverse side of this trend: The inflationary use of the term has led to a dilution of its meaning, transforming it into a battle slogan, which almost totally obviates focusing on the real issues, that is to say on an active examination of the meaning of design.

Lisa Hoffmann
A Plea for Openness

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The term ‘design’

Apart from numerous attempts to define the term ‘design,’ the word is used in every conceivable context every day. As it is unclear what the term really refers to, it is equally difficult for clients and the public to assess what should be demanded or expected. That creates numerous difficulties for those engaged in the field of design, or those that come into contact with designers in the course of their professional or private lives: As the occupational title does not enjoy any protections, anything can be described as ‘design.’ The use of the term is proliferating, and in many cases, it is reduced to the role of a marketing term. This limitation to abstract superficialities forces those who practice design into a position in which they must constantly explain and justify themselves and their profession: a time-consuming burden which distracts them from their real obligations. Design is more than a label or an empty shell — it is the manifestation of concrete knowledge and the translation of a process into a specific form.

However, if you can accept the openness of the term, then it offers a broad range of opportunities. Firstly, the tools of design are available to everyone – the constant growth of the network of designers guarantees lively exchanges between different disciplines and the constant revitalization of the practice by new perspectives. As design can constantly change its appearance and is not limited to any definition, it is always unexpected, unorthodox and surprising. And that is what gives design its force: its unconventionality, which allows designers to combine, to imagine that which does not yet exist and to create new things. Design as a strategy always involves working with unorthodox methods, and using established structures to create new connections, which then on their part become established and reinterpreted.

Building on theoretical work, which takes a reflective and thoughtful approach, design is an anticipative discipline that masterminds reflectively existing situations. Design is therefore the authority that actively communicates in the process of merging different elements: with the various participants in development – whether those who drive change through research, those who establish change in society, or those affected by the change – on the one hand or, on the other, in the form of the specific products they create.
Designers are a connective element; they move provocatively elegant in every imaginable discipline and benefit from their adaptability. While the specification and specialization of other professions often does not allow their members to orient themselves in a social and scientific environment, which is changing ever faster, and engage in interdisciplinary dialog, designers can often act as mediators between those driving new developments and thereby have unexpected influence. They can identify the essence of innovations quickly and help to shape them and find concrete applications. Like chameleons, they use their various languages and dialects to create the ability to communicate and, in the end, articulate a consensus in a universal language that is understood by all.

Thus, the role of the designer is to constantly switch between general and particular perspectives in order to recognize the needs of individuals while, at the same time, being able to take the overall context into account. Bearing this in mind, designers are far more like directors or conductors, though they do not lead from an exposed position. Instead they must adapt to the rhythm of an ensemble and use diverse and subtle methods to carefully take action exactly where necessary. They work on details that make the whole feel accurately choreographed and finely calibrated. Their work can be invisible, problem solving, local and application-related, or it can be made visible by crying out loudly and thus drawing attention to hypothetical potentials and pointing to existing drawbacks in order to propose solutions. The designer understands the system, filters it, and then summarizes its essence. The product of the designers’ work is therefore a manifestation of opinion, reflection and anticipation. In this sense, the designers make aspects of the social environment legible; their products make the abstract accessible and therefore usable. Like interpreters, who translate from a foreign language into a familiar one, the designers formulate things in such a way that they are universally understandable, applicable and interpretable. By making things accessible, they work against relationships of dependency and create equality in terms of equal prerequisites. They put tools in everybody’s hands.

The products of design
The methods just described often do not appear in the way that the cliché of a
product of design implies: They are not pleasing forms in a fitting environment; instead, they are open, adaptable and available to interpretation, working in various and changing systems. Speaking of products, I include those abstraction ones that can be found in experience or in virtual spaces, regardless of economic dimensions (a product must not always be for sale).

In addition to traditional, concrete products, which are defined by their appearance and applications, there is a further category of products that can be used as a framework for action and adapt to the user. They can be understood as systems that work like building blocks. It is possible to differentiate broadly between closed designed systems, in which prefabricated building blocks are put together by users on the basis of instructions, and open systems, in which the components can be arranged any which way. If users are capable of using the necessary tools, then they can create their own components.

This new understanding of a ‘design product’ as a system involves users and gives them independence, enabling them to use and adapt the hardware that surrounds them for their own purposes. Our world is increasingly made up of modules that we can arrange, adapt and interpret according to our needs. The aim is, therefore, to design and accompany such processes in order to ensure that the interfaces between system, product and user do not suffer from any gaps.

Design training
The training required for designers should be just as open as the activities and products of the field. That does not mean an end to teaching. Quite the opposite: students must also be given the means they further on are able to apply, interpret and develop. This process can be compared to a basic course of studies and should give the student some insight into the various fields of the humanities and natural sciences, in addition to comprehensive theoretical and practical training. Practical abilities and theoretical reflection on the activities of the trainee designer must be transmitted in such a way that smooth communication is guaranteed. Scientific training should primarily aim to give the students an overview and help them in the process of acquirement. The aim is not to know something, but rather to know that something exists and how to access knowledge.

In addition to this passive educational basis, students should learn col-
laboratively and actively engage in research. Here there can be no clear distinction between the teacher and the learner, as everyone has a range of abilities and can make use of their knowledge and experience. Universities must be seen as locations with potential, in terms of human and financial resources and time. Universities are free from the pressure exerted by customers. Their work does not necessarily have to be commercially viable, and it can be divided between members of a group who each have different talents. As a combined university-based pool of knowledge, one has the opportunity and motivation to bring about changes in the real world. What use is a huge volume of hypothetical work if there is a need for action? Design students and professors – they are all equally learners and teachers – should head out into the world. They should research and pose questions, and they should provoke and drive change. It is difficult to establish the kind of freedom as secure as that found in the university environment, but it can only be truly used if the old defenses of the ivory tower are breached. It is very important to be consistent in that process. The teaching of the basics must be structured, clear and follow a plan, and it must be clearly demarcated from free research activities. In this way, it can be ensured that standards are followed and that graduates in design have mastered a certain range of technical, theoretical and practical abilities that can be demonstrated by examination certificates, which in turn can be used to provide documentary evidence in the designer’s subsequent career. This allows performance to be better compared and thereby creates greater trust in the abilities of the designer.

There is also an urgent need for discussion about training in the field of design. Courses of study must include structural opportunities for collaboration and exchange. It must be ensured that graduates are comfortable in an international environment and that they have an awareness of global developments, including those beyond the field of design. That is why time spent studying design can – following the example of craftsmenship – be considered years in which designers are apprentices and journeymen, a time in which the designers’ most important ability – the skill of rapidly absorbing and applying new knowledge – can be demanded and promoted. The focus should be on learning how to learn, observe, analyze and, finally, assimilate that knowledge.
Conclusion

The question “Quo vadis design?” is as old as the field itself. It reflects the character of design. Constant reflection, classification and development, pressures and questions. Design has no set form. Instead, it is constantly evolving newly with each act of design.

Design, designer, design product and design training are, however, congruent in their basic features and form a logical whole. The task of the discipline of design is to channel social realities and needs. The role of the designer is to communicate by synthesizing individual pieces of information in order to create a product that can be understood universally. The design product forms the basis of the ability of the user to appropriate by means of interpretation and modification, which in turn allows social trends to be identified and incorporated into future design. Our constantly changing society needs products that can keep track with this process and designers that can think ahead. The university must become the place where the current understanding of design is constantly questioned and new limits can be set – without commercial pressure or time concerns.

1 This approach is part of the activities of Bauhaus, Ulm School of Design and the Werkbund in its publication “Deutsche Warenkunde,” which states: “We are not the only ones that form objects; objects also form us” (Stefan Hirzel, in: Deutsche Warenkunde, eine Bildkartei des Deutschen Werkbundes, eds. Mia Seeger and Stefan Hirzel, Stuttgart 1955, introduction).

2 That does not simply mean the skills of the handicraft, but also the ability to effortlessly handle the hardware, software, methods, terms, processes etc. used by designers in their daily work.
Where is design heading? A challenging question. To answer it, we need to define it more clearly: Where does design currently stand? But also: What does the term ‘design’ actually mean today? This brings us to basic issues. We can come closer to answering these questions by thinking about the task of design. Here, too, there are of course many different views. In the following, I will describe three of these views or approaches that have been observed.

### Design for the market of desires

Design, as practiced on a widespread scale today, is about creating pretty packaging for products with short life cycles. This applies to a large part of consumer electronics, fashion, exhibition stands, or decorative and lifestyle items. Things are designed to (hopefully) sell: Styles are superficial and effective, and items are consumed quickly. In view of increasingly scarce raw material and energy resources, however, producing items for short-term entertainment or self-expression will no longer be possible on this scale in future. This brings us to a medium-term problem for those who have so far designed these things. One way out of the deadlock...
is to make products digital. Designers no longer create tangible products made from chipboard, plastic and aluminum, but digital products that enable users to interact and convey information via screens. This gives designers leeway, but tools and materials have changed: from lathe and foam to screen and pixels.

**Design of objects as an independent cultural contribution**

A second approach sees young designers turning their backs on disdainful demand. In this sense, design is understood as a contribution to a pioneering language of form and as an expression of the zeitgeist. A former student says: “It happens to be our job to make new and beautiful things. There are already plenty of films, and yet every year thousands of new ones are released.” The comparison between product design and film reflects this attitude: Design is a contribution to culture. The boundary between design and art is being blurred. We fight the worthlessness of objects with formal aesthetic experiments. In our work, we would like to be guided by our own interests and follow our own convictions. We are moving away from industry and its narrow-minded constraints. We are manufacturing ourselves, or joining forces with small craft enterprises. We are looking for something special, and of course for a clientele that appreciates special products. The focus is on the object, not the product, and small batches in a fairly high price range are emphasized. The market for this type of design is small and highly competitive. Since there is hardly any money to be made, we are becoming part of the economy of attention. We stay poor, but become famous. Perhaps. And this option seems to be a very tempting one for the majority of design graduates, despite the questionable success rate.

**Design as a problem solver**

The third approach to design, namely as a method for solving problems, is not particularly new. But when it comes to our future, it may once again have become a ground-breaking concept. However, the real problems faced by today’s industrial societies can no longer be solved in the conventional sense by products. Problems such as what to drink out of, what to wear, what to sit on or how to clean clothes, have not been considered problems for a long time by the majority of our society. Today, real problems include: loneliness, stress in a meritocratic society, social impoverishment, overproduction, consumption and waste, scarcity of resources,
and injustice in the global economic structure. It is difficult to imagine new products that could actually contribute to solving these problems. Because of this, designers of the future will increasingly be required to detach themselves from their products and design systems instead. Proposals for new economic systems and alternative lifestyles are needed. Of course, these are not conceived by the designers alone – complex problems can only be addressed by multidisciplinary groups. In order to join the discussion, designers first of all need to know how to communicate and impart their skills verbally. This requires stronger internal discourse to define the discipline and the skills of its practitioners, as well as the individual design areas more clearly. Design research is becoming more important in that regard. It can help designers develop and strengthen their particular discipline. An established and well-founded methodology can empower designers to address the real problems and needs of our society. It can prevent us from flooding the market with superficial placebo products and help us develop relevant solutions.

In terms of the future of our discipline, this third approach to the role of design seems to be the most promising and most forward looking. Design has to return to its claim as a problem solver. Doing so will answer questions about the relevance and funding of design.
There are many types of design. The following text serves to discuss the extended cultural relevance of product design and the importance of artifacts that arise from design processes.

The image of the designer is one of a provider of services: a problem solver. This image is of course relevant for several areas of design. But who can guarantee that the problems that need to be solved are well-described, or that the briefings for the services to be rendered have been thought through? Of course, industrial robots, interfaces for medical equipment and rescue equipment for fire brigades have to be designed. And the relevant requirements are of course clearly defined.
But another aspect of design comes into play here, namely drawing a reference to the cultural background it originated from and the impact that it has on this cultural background. Culture describes the subjective and objective factors that individuals can employ to transform themselves into something special.

Mr. Spock, a character from the TV series Star Trek, has been greeting us since the 1960s with the words “Live long and prosper!”, which was inadequately translated as “Lebe lang und in Frieden” (“Live long and in peace”) in the German synchronization. This doesn’t just refer to development on a material level. It also refers to spiritual growth, development of the personality and therefore also of our surroundings, which influence and mold the individual. The role of design is increasingly one of designing lifestyles and cultural contexts. What can product design contribute to the realization of a desirable future in this context? Our culture is also reflected in the products that evolve from it. A Boeing 747 is just as much a cultural product as an iPad or a sneaker.

Products are not only inherently concepts, symbolic and aesthetic objects, something that can be derived from their visual aspects. Modes of conduct and the creative enhancement of what products are intended to achieve also form an important aspect of design. This creative ambiguity and dynamism is inherent in all human action. Horst Rittel termed these social dynamics, which complicate planning processes, “wicked.” Maldonado and Bonsiepe defined the image of the astronaut and the juggler at about the same time: One operates within a technical system according to specifically defined requirements, while the other approaches the possibilities of use and hence of existence in a playful manner. The juggler develops own attitudes and discovers new contexts of use, and not least new needs. The approach taken by the juggler ranges from individual usage patterns to unsuspected dynamic aspects at the systemic level. New contexts and dispositions, which were not originally intended but have only emerged through being embedded in cultural processes, can be created. The most prominent respective examples are the internet and mp3 file format but also, from a historical perspective, the use of wireless communication as a mass media (radio). The systematization of such seemingly random but desirable processes is the subject of current debates about a societal transformation toward sustainable lifestyles. Even if a ball is dropped every now and then: The bottom
line is that juggling appears to be a promising approach in the design process as well as in everyday life. This is the reason why I consider design on the one hand to be an opportunity for development, and the other hand a reproduction of society in the form of material objects. There is always a fascinating tension between tradition and renewal.

It is the very society that reproduces itself through design on a material level, and not the systems, practices and products that are the result of design and creative processes. If familiar deployments are reproduced at this level and if only the surface is decoratively altered, then society may have a problem.

Artifacts as products of culturally relevant innovations have never just been the result of professional, service-oriented design work. They often arise in communities of able amateurs who do not design for superficial economic reasons, and whose work often has great socio-cultural and economic relevance.

Discourse is also a man-made artifact. Genuine language-based discourse must first make all its objects explicit to the individuals involved in an hermeneutic sense. Products and projects are also artifacts that can become part of or even the subject of discourse. Convergence is not only supported by the rational, conceptual notion of something, but through real-world experiences, aesthetic ideas and action-oriented approaches to reality. Here, design plays an essential role. Each product was once an idea. However, as far as it is perceptible, tangible and practicable in the real world, it is the result of design processes.

What happens when ideas are turned into material reality? Randomness and ambiguity is generated. The unexpected arises when using design tools. An object has a different meaning, appearance and level of detail when it is an image object than it does as a cardboard model and functional prototype. The playful, seemingly open-ended use of these tools and methods gives rise to the unexpected, creating an experience through sharing ideas, touch and aesthetic aspects. Intelligent sensory appeal, experience of materials, objects and contexts are a genuine subject of design practices.

The design of these sensual and cognitively perceptible practicable phenomena can not only be considered an immediate method of realization. The design process and handling of materials generate unique qualities and points of contact, something that cannot be deduced intellectually. This is not just an effect
of implementation, but a method that needs to be systemized and put across in a recognizable form. This means that the concrete object or project must be worked on, and independent ways of approaching subject areas must be condensed into adaptable strategies using best practice examples. The product of good design can only be seen in the resulting artifacts and contexts.

This can trigger the creation of sign systems, narratives, and metaphors: The creativity of action is a strong catalyst for transforming inner beliefs and shared values. We relate to existing cultural dispositions, signs, etc. But through action and interaction, we create something new on all cultural and social levels. As designers, we should carefully and wisely condense these impulses into culturally sustainable products and bring in our independent expertise, in other words, make these strategies the subject of our work.

Fine tuning appears to be necessary here. The roughly predictable effects of products need to be developed, tested and implemented in protected spaces. This requires real laboratories with connections to university research clusters. The things that are researched in real laboratories and the artifacts that are examined for their relevance can be a product of design-oriented research. Besides product development, the purpose of the design is research. The ability to produce one-off designs and small batches in high prototype quality, and to use these reified models of thought in real laboratories, is a future focus of research through design and research in design. Extending experimental scenarios to industrial production processes, permanent prototyping and permanent beta could represent culturally sustainable strategies.

The spaces that create this autonomy must be developed and, once they are available, defended. The role of universities needs to be reconsidered, institutions and structures need to be developed further, new forms of cooperation with stakeholders from industry and society need to be realized by means of specific projects, and prosperity needs to be supported beyond parameters such as GDP.

2. A more accurate German translation would be “Lebe lang und habe Erfolg!”


Design, where are you heading? This question hides a multitude of intentions. It can be asked with a great deal of pioneering spirit and answered with as much of the same. It can conjure up praise for technological progress, human innovation or even individual locations of industries. It can be critical: questioning the ethical, social or ecological role of design and calling on it to take a supposedly better direction. It radiates curiosity, commitment, compassion.

However, the question also sounds scared. It is the question of a worried parent who calls after an adolescent child from the doorstep as darkness begins to fall – but the child has grown up and has long since other things in mind.

In fact, most designers consider themselves the mothers or fathers of their creations, regardless of whether these are industrial products, communication tools, fashion items or interactive media. They feel responsible; after all, they are the ones who raised the child and want to keep it safe from bad influences or even from falling into disrepute. And as a certain relaxation sets in with most
parents as the years go by, when not every mishap becomes the order of the day and not every scratch is immediately bandaged, the designers too become more relaxed over the years when it comes to worrying about their beloved designs. So it may not seem surprising that in debates about the future of design, there is a perceivable gap between young and more experienced parents, especially when concerns for the reputation of the beloved child become the main issue.

The fact that design has always evoked ambivalent associations in broad sections of society, and that it is by no means seen as a reputable profession even in the 21st century, is a problem that is admittedly more a matter of concern to designers who are still new to the scene, since they have not yet gotten their child through the tumultuous years. There are constantly lurking dangers and temptations: Will it have to repeat a year of high school just before graduating? And what about all the drugs? Established and successful designers simply wave such concerns aside: A few black sheep won’t ruin their child.

If we can attribute the overall image problem of design in its first decades, and indeed the concept of design as a whole, to the newness of the discipline, this reasoning cannot be applied today. Design is a buzzword, an omnipresent empty term – a selling point, a distinguishing feature, even a seal of quality. Design itself can hardly take the credit for this success – it has always been a stepchild, a trickster that you may not really care to trust, although you very well suspect that you will be dependent on its services in the long run. Another child, with a similar biography of exclusion, contempt, and struggle for recognition, had to help design along its path to success: marketing. Together, the two fought for a more or less firm place between purchasing, sales, and the big gatekeepers, the engineers. Given this career, one may hardly be surprised that young, successful designers sometimes display the arrogance of an upstart, a nouveau riche, who now punishes all those who ever doubted him with a smug smile.

But young design is not out of the woods yet. It resembles a teenage rowdy, who, having enjoyed initial minor success is now brimming with confidence and self-esteem, and is more vulnerable than ever to external dangers without even realizing it.

Its greatest weakness is simultaneously its greatest strength. It is the blurred line between being everything and nothing at the same time, trying to
have an influence everywhere and not really belonging anywhere. And that is exactly where the opinions of the young and more experienced parents about the dangers and potential of this fact differ. The design profession is not protected in the truest sense of the word. Today, the design profession is still not comparable to that of a doctor, lawyer, or even an architect. With those professions, you know “what you are getting.” In those sectors where the services offered in urban areas try to outbid each other in terms of presence and expertise, the vulnerable concept of design screams at us from all fronts: nail design, hair design, slide design. Consumers can “design” their own hamburgers at takeaway stands, and ringtone providers host logo design competitions. And even in places where designers themselves would prefer not to be haunted by this term, they are soon robbed of this delusion. Behind the monastery on the small island in Bavarian Lake Chiemsee, where Industrie Forum Design recently held the “quo vadis Design” conference, visitors will encounter a sale sign: “Jewelry and design.” Once again, a child with a questionable influence has taken a seat alongside design, and the young parents are becoming nervous. Do people think that our children are hanging around nearby? Do we have to take them home? Or have we lost all influence, no matter how we treat our children? Our protective instinct is of course also shaped by vanity, especially in an occupational field in which our own style is inseparably linked to the product or child.

It is certainly not a new topic, this problem with the concept of design. But it is becoming more and more apparent that resistance is growing, particularly among fledgling designers. It is becoming evident that there are different currents within the industry, and that designers do not agree what to make of the crumbling concept of design. Discussions on the need to protect the concept of design often rapidly turn into a metadebate on the definition itself. What is design? How long has design existed? A conceivably wrong approach. In the interest of the design profession, the question should be: How do the others see design? If, when asked about the concept of design, half of the population thinks of well-manicured fingernails, it is irrelevant what an elite circle of design experts has to say about what design really is. The young parents do not care whether their child becomes more creative and independent through self-experience if it is being ostracized or ridiculed by society as a result. The parents take precau-
tions, they think of tomorrow. They do not want their child to have to sit on a chair at some time in the future and justify whether it is really good at anything or whether it is in the fingernail business, just like the others who look the same.

At this point, more experienced parents try to appease the situation: If the child is capable of something, then it will stand out from the crowd. After all, their children became something in the end, too. The zeitgeist is now destroying this theory more and more. Eventually, this mass will simply become too large, and the way in which applications are handled by the HR departments of large corporations should be an indication that it must be possible to detect quality from a one-page cover letter in the long run. The critical mass of goods and services that bear the hallmark of ‘design’ has long been reached, something that particularly those who want to work in this very profession see themselves faced within the next decades. The concept of design has become a deployment, and in the future they will add something to it that no longer works unfettered by context, without having influenced this context.

The debate about the ambiguity of the concept of design is hence becoming a long-term debate about prejudice. This renders it a social and political debate. In times of political correctness, anti-discrimination legislation, gender mainstreaming and the women’s quota, it would be only logical to think seriously about legally protecting the design profession. At least, we should be talking about it, so that the young parents can sleep peacefully again when the kids have flown the nest.
Appendices

Kloster Frauenchiemsee, Samstag, 14. September 2013

Speakers

Host
Prof. Dr. Wilhelm Vossenkuhl, Ludwig Maximilian University of Munich

Science
Prof. Dr. Andreas Dorschel, University of Music and Performing Arts Graz

Architecture
Prof. Dr.-Ing. Winfried Nerdinger, Munich Technical University, Munich Documentation Centre for the History of National Socialism

Economic Ethics
Prof. Dr. Dr. Nils Ole Oermann, Leuphana University of Lüneburg

Economics
Prof. Dr. Torsten Oltmanns, Roland Berger Strategy Consultants, Munich

New Media
Prof. Wolfgang Sattler, Bauhaus University, Weimar

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