

Looking out, looking in, and looking at:

The world, yourself, and design

Tracing out a new taxonomy of the design process

The design process as it is usually taught and applied at the beginning of the 21st century is concerned with goals, aims and targets. It is dealing with business and industry, target groups and financial targets. It is looking at the often “wicked” problems found in all areas of life. It is, in general, working with – or trying to work with – the world, its structures and problems, including its systems, its territories, its politics and power struggles. But is this the only way the design process can be approached? No. There are two other approaches – one which was the victim of a famous struggle in the Bauhaus, and one which was discovered already 800 years ago, but is known in the West only since the second half of the 20th century.

When design deals with the world, the same systems and politics which design tries to influence (with solutions, products, buildings, etc.) do in return influence design. Design is inevitably part of the same systems and politics it tries to influence. It is itself involved in politics and territory struggles, and it also has its own politics, which can easily be observed for instance in the political moves of supra-national design organisations.

Design deals with the “applied” side of creation, and it is that application which makes it part of how the world runs at a given time. In contrast, art receives its justification through the claim to be separate from the world in order to reflect on it, although it is, of course, subject to the systems and structures of the world by means of the art market. Historically, design had a precarious and shifting position between its own ideas and the need to “play the game”, between trying to change (or at least influence) the world, its politics, its taste, its solutions, and at the same time retaining an integrity of its own by means of ideologies and “isms” of its own. For many architects

and designers such as Otto Wagner or Adolf Loos in turn-of-the-century Vienna, this was experienced as a lifelong struggle against the structures and entrenched world-views of their time.

The struggle for design and its being part of the outside world is well illustrated by the famous conflict between Walter Gropius and Johannes Itten in the Bauhaus. Walter Gropius was perhaps the most energetic promoter of the position that design needs to be part of industrial and commercial structures. He saw the Bauhaus as a highly practical and hands-on institution influencing industry, business, and crafts by promoting the collaboration of creatives, business people, and technicians.

In contrast, his colleague Johannes Itten advocated the “free artistic manifestation” as an educational principle and wrote: “Young people who begin with market research and practical and technical work seldom feel encouraged to search for something really new”. Gropius answered: “If we were to completely reject the outside world, then the only remaining way out would be the romantic island”. After three years of teaching, Itten, who got to know Gropius in Vienna, resigned from the Bauhaus in 1922, losing out on what has become a controversy between *design as creative inner reflection* and *design as practical technical work*.

In 1926, the Bauhaus moved to Dessau and Gropius pushed further for the functional direction, advocating the design and production of objects which promised profit. Two years later and 10 years after the opening of the first Bauhaus, Gropius resigned. The Nazis closed the Bauhaus in 1933, Gropius emigrated to London in 1934 and later to the United States. Also most of the other staff emigrated, considerably influencing the nascent design discipline in the United States. To this day, many American

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Mario Gagliardi skriver i hvert nummer af inform lounge edition om et selvvalgt emne under overskriften "Mario Gagliardi On Design". Alle artikler er på engelsk.

design schools are still essentially working according to the nearly one century old Bauhaus curriculum.

In 2007, 86 years after the Bauhaus conflict, Gropius' position has all but taken over the design profession. The good news is that design is now indeed much more a part of business and popular culture as before: Businesses are using design more than before and regions worldwide try to position themselves through creative "industries". The bad news is that design, by being much more part of the market, has also lost part of the introspection and distance needed to identify and possibly solve problems. So it comes that design is everywhere where there is a market, but it is not where it is needed.

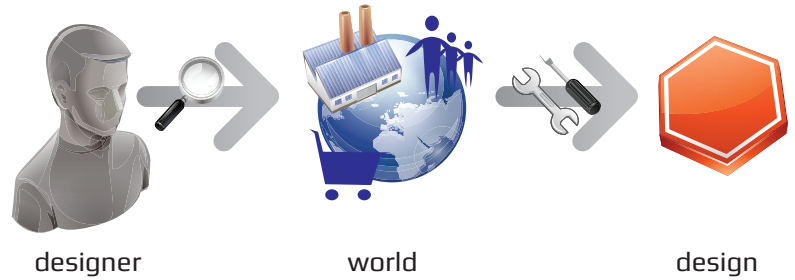
Star architects, seen as opinion leaders in architecture today, are exclusively concerned with monumental, attention-grabbing buildings. But merely 5 % of all construction and building underway in the rapidly growing cities of the world is planned at all. 1 billion people are living in daily growing urban slums with no or bad access to basic infrastructure, water, electricity, and sanitation. The numbers look bleak: Every single year there are 80 million people more on this planet, nearly half of which – 35 million – will live in urban slum areas which no architect ever visits. That does not fare well with the credo of Gropius: "The ultimate goal of all creative activity is the building".

Today design processes are predominantly seen, taught, and analysed by scholars as processes directed at the "world out there", at the systems and structures of the contemporary world (mostly reduced to "the market"). I call this view the *extrospective view* – the process of looking out at the world to arrive at a design. But let us look back again and follow the footsteps of some members of the Bauhaus after it was closed. Johannes Itten's view, which at his time seemed incompatible with Gropius

extrospective view, was for students to explore design from within themselves, a view which I call the *introspective view*. His view resonates with, and was possibly influenced by, Freud's theories which have been keenly discussed in the Viennese circles he frequented. Although Itten left the Bauhaus, parts of his thinking nevertheless remained in the ideas of other Bauhaus teachers, notably Lazlo Moholy-Nagy. Other traces of the introspective view can be found in the United States. Around the 1930s, Design pioneers Henry Dreyfus., J. Gordon Lippincott and Raymond Loewy were looking for "inner images", psychological aspects such as remembered detail, mental associations and "memory value", albeit not in the designer, but in the consumer as a means to boost sales.

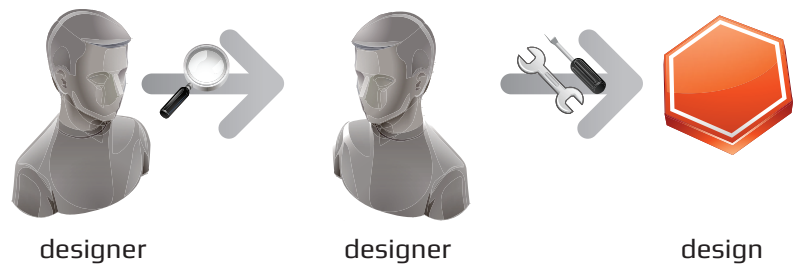
Next to the now ever-present extrospective view and the – more or less forgotten – introspective view there is a third view, invisible at the time, which I call the *generative view*. This view is most difficult to trace out as it was not visible in the first half of the 20th century, the time when design was formulated as a discipline. But Laszlo Moholy-Nagy, also a Bauhaus teacher who emigrated to the United States, was possibly aware of the lack of a third view when he wrote in 1946: "The coming of an electronic age brings the stringencies of the profit system into even greater conflict with the potentialities of such an age for a richer socio-biological economy". Moholy-Nagy called designers "integrators" and followed Itten's approach that creative abilities have to be developed from within the designer, spotting the shortcomings of the functionalist approach and its close link to the "profit system". Moholy-Nagy's idea, influenced by Goethe's philosophy which stated that the solution of a problem is in the problem itself, was one of an "organic" functionalism.

look out – the extrospective process:



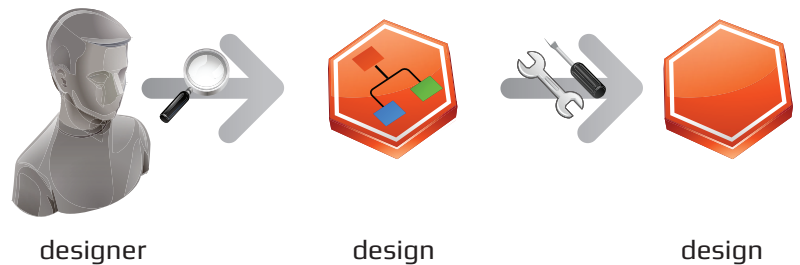
Itten's comment on the stifling of "something really new" by market research and practical and technical work is still valid. The extrospective view is naturally constricted by the viewpoint of the designer, as the world as a whole is, of course, impossible to see at once. Trapped by the particular perspective of the world the designer looks at, the extrospective view often leads to a final design which is nothing more than an assembly of known elements which the designer assumes to solve the task at hand.

look in – the introspective process:



When the designer does not employ an introspective process to find his personal expression, he can merely come up with an assembly of copies of things he has seen somewhere else. And indeed, everybody with eyes to see comes across numerous designs which are just assemblies of copied elements without any internal connection.

look at – the generative process:

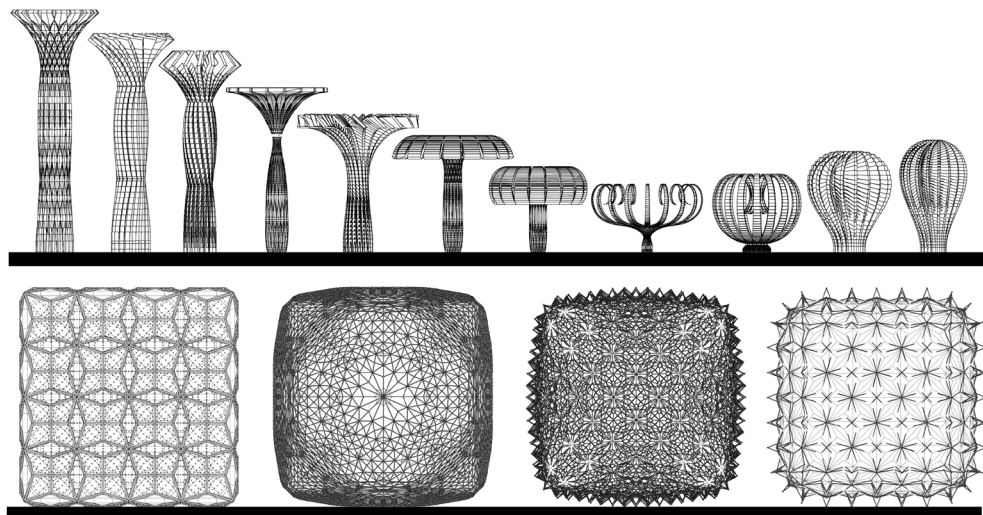


To create a convincing design it needs more: an insight and understanding of something which must be there, but is certainly not superficially obvious in a design: a certain internal rule, an inner connection of parts. This skill is most difficult to acquire as it is not obvious. It needs experienced intuition and a tacit understanding of the interplay of expression, meaning and formal composition. Exactly this skill can be made explicit and taught by means of a third view of the design process, the generative view.

The extrospective view looks out and works with the world to arrive at a design. The introspective view looks into and works with the inner self of the designer to arrive at a design. And the generative view looks at design to arrive

at a design. So what does that mean, looking at design to arrive at a design? The generative view can be traced to the tacit element of the crafts. This tacit element is performed when, for instance, a weaver follows the flow of a pattern and varies it during his creation coming into being. Historically, the generative approach was pioneered in the Islamic world which, through the invention of the zero, also prepared the foundation for the binary system, the basis of all computer processes. It was shown by Peter J. Lu from the department of physics at Harvard University that a generative approach to design was known in the Islamic world since 1200, when craftsmen applied generative principles (tessellations and self-similar transformations) to create intricate, "quasi-crystalline" designs.

*Generative structures:
Generations of a pillar
and a cube. Both series
have been generated by
successively modifying
underlying parameters.
Designs by the author.*



The generative design process does not look at a final design, but at the mechanisms which produce designs. It sees design essentially as sets of instructions. It does not, such as the extrospective and introspective processes, work on something else (the world, yourself) to gather information, or intuition, which is then used to arrive at a final design. Instead, it works on the rules underlying different designs, structures and systems. Some of the simplest of these rules are cellular automata, a result of the work of John von Neumann, which have been shown to create patterns and structures found in biology, physics and chemistry.

There is no doubt that in order to create solutions which work in the world, a designer has to look out at the world, its systems and structures. Systems and structures are either human-made or natural. The extrospective view deals with the former (cultural structures, technical systems etc.), while the generative view deals with the latter (ecosystems, crystalline and biological structures etc.) When employing the extrospective process, one should be aware that it has two major downsides. Firstly, in dealing with the world, it is inevitably involved in its politics and territory struggles, always being in danger of losing the distance needed to solve problems. Secondly, it is always constricted by the particular viewpoint of the designer, which itself is inevitably influenced by his worldview and the culture he is living in. The extrospective view is also the reason for phenomena such as “dominant designs”,

the reinforcement of existing styles through the assembly of well-known elements. It is important to look out from as many different perspectives as possible and not only at where there is a presently perceived market.

The introspective process needs to be rediscovered, as genuine creativity is just as essential for every designer as the capability to look out and analyze. The introspective process enables the designer to discover his own self in order to find his purpose, interest and, most importantly, his style and unique expression.

The generative process, although discovered already 800 years ago, is in its early stage, essentially made possible by the possibilities of computation. I am exploring the process myself to create experimental architectural and product designs (see <http://www.mgstrategy.com/algorithm.htm>, <http://www.mgstrategy.com/intint1.htm>) and think that it holds much promise for the design of the future – as a tool to explore and create complexity, to explore new, rule-based structures and systems, to create structures for bionic design, or for application in a next generation of instant, rapid prototyping-based production lines creating infinite variations of a basic product. Working with the generative process is fundamentally explorative, following patterns throughout a project. Both Johannes Itten in his “search for something really new” and Lazlo Moholy-Nagy, looking for “the potentialities of the electronic age for a richer socio-biological economy”, might be pleased.