

Individualization and Personalization are Characteristics of Art – Applied now as Art Customization

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Abstract

As people now appear almost to have forgotten, applied art was once an important field of industry. And in 1907 it was still possible for the Viennese architect Adolf Loos to assert that "Without ornamentation we would only have to work four hours a day." This sounds plausible if, for example, we consider the percentage of artistic output involved in building a cathedral or the first, delicately chiseled brass telescopes.

Now, we know that as a result of industrialization, the link between art and consumer goods has been broken and that applied art was subsequently ousted from architecture and design. However, it is now to be assumed that the new technologies and processes of mass customization favor a renewed association between art and consumer goods. What is more, in view of the ever-growing possibilities offered by computer-controlled tools and the general trend towards individualization and personalization, a kind of renaissance in applied arts becomes very much a feasibility, representing as they do probably the highest-quality means of expressing individualism and personality. But in this digital age, the applications for art are no longer to be found in the realms of handicrafts, nor in the processes of industry, but amongst the fundamentally changed conditions of mass customization – in the form, so to speak, of art customization.

Keywords: Art Customization, Ornament, Digital Pattern Books

1 INTRODUCTION

William H. Davidow and Michael S. Mallone describe mass customization as a cultural revolution involving sweeping changes in all spheres of life, comparable to the way industry supplanted handicrafts. [1]

The question now is whether the digital technologies and processes of mass customization really do re-channel our cultural development with such explosive force, and, if so, what are the resultant opportunities and perspectives? The following article concentrates on one of these perspectives: the relationship between mass customization and applied art.

What mass customization and art have in common is the fact that they both aim at individualizing and personalizing artifacts. In the one case, that of mass customization, the search for individualization and personalization is just starting; in the case of art we are reminded of the age-old traditions of individuality and personality, for example in the case of arts and crafts.

In order to gain a clearer picture of the esthetic potential of mass customization the first thing we need to focus on is a specific section of the history of applied art, starting with the technological and economic conditions of industrialization, the principal cause of the decline of applied art and the death of ornamentation. I will subsequently look at certain trends in contemporary art which, judging by appearances, are now embracing the new technologies and processes of applied art, resulting in a situation that could perhaps be dubbed the renaissance of applied art – or art customization.

These academic reflections are complemented by a feasibility study commissioned by the German Federal Ministry of Education and Research (BMBF) and conducted at the Academy of Art and Design's C-LAB in Offenbach. [2] The study not only investigated the

theoretical aspects of the term art customization, it also linked the process to experiments in art and design, using as its example the construction of several items of customized furniture.

2 ARTS AND INDUSTRY

Industrialization was the decisive event in the decline of applied art. The mass production of art has proved impossible. And whereas in history arts and crafts were able to develop a symbiotic relationship, to date nobody has seriously attempted to create a term from the words art and industry.

Ornatus

1450: more precisely speaking, industrialization and the decline of ornatus began with the printed book. At the time, ornatus was not only the term for what we call ornament today. Instead, the word described the whole gamut of image-related illustrations and representations including fable, metaphor and rhetorical figures of speech. Consequently, it was not only a question of the pictorial arts when lead composition supplanted illigraphy and calligraphy in book design. From this point onward generalized, unilateral abstract thought began to dominate the common consciousness.

The success not only of science and technology, but also of abstract art and minimalist design are the result of abstraction, the fundamental intellectual direction pursued by the Moderns. This approach to design also abstracted from cultural diversity, regional peculiarity, individual influences and personal individualism.

Today, however, in the age of digital word and image processing, the tide has started to turn. Even conservative dailies include a high proportion of pictures, television has penetrated to the forefront of our

consciousnesses and computer processes of great complexity are conducted using simple metaphors such as that of the desktop on the graphic user interface.

Historicism

1870-1900: and when industrialization permeated the majority of everyday consumer goods the ornament lost its value. However, this did not immediately cause the death of ornamentation. Instead, for a short time ornamentalism even flourished. In historicism, the Arts and Crafts Movement and in Art Nouveau.

Historicism can largely be attributed to the experiences of a middle class which grew up with industrialization and suddenly found itself able to indulge in an wealth of ornamentation such as previously only the aristocracy could afford. In reality, however, there was nothing aristocratic about these conveyor belt ornaments. They were cheap goods, scarcely fit to be described as status symbols and deprived of their individuality as mass goods. However, this double devaluation only gradually penetrated the consciousness of the customers.

Arts and Crafts

1860: it was no chance that the first resistance to the negative side-effects of industrial production occurred in England. With the support of philosophers such as John Ruskin and William Morris, the Arts and Crafts Movement criticized both the "inhumane" working conditions in industry and the esthetic devaluation of industrial products. However, seeking to reconcile a desire for social reform with esthetically conservative objectives, the only solution the Arts and Crafts Movement could come up with was to revert to traditional handicrafts, arts and crafts.

Art Nouveau

1900: Art Nouveau, which also was critical of historicism, developed subsequent to the Arts and Crafts Movement. However, aiming at esthetic innovation, the new movement ventured beyond the retrograde shapes of the Arts and Crafts Movement, even creating a new form of ornamentation with clear, flowing, organic lines, such as those on the entrances to the Parisian metro.

In the first decades of the 20th century, the reform spilt into two diametrically opposed schools of thought. In the one camp there was Art Deco with its unrestrainedly luxurious ornamentalism, choking on its baroque meaninglessness, and in the other, industrial design came into being. According to the latter movement, in the industrial age, neither handicrafts nor ornamentation could save applied art.

Industrial Design

1925: initially, the transition from applied art to design was fascinating in its consistency. By means of polemics scarcely less vehement than religious zeal, ornamentation was declared taboo and applied art banned from architecture and product design. It was clear to everyone involved from the outset that this would mean the end of cultural traditions, regional and individual differences. However, this was not perceived as a loss, but was stylized into a new ideal. The ideology of classical industrial design, which is also known as Functionalism, expressly defined its esthetic ideals as international, impersonal and above individuality.

The public never completely understood this. Nevertheless, the thinking of architects and designers was governed by Functionalism right up to and into the 1960s.

Design Criticism

1965-75: design criticism was first unleashed as a reaction to the general shock provoked by the uniform

impersonality of satellite towns. This criticism questioned the functionalist ideals, seemingly radically. Psychologists called it inhumane, sociologists lamented the lack of social and cultural differentiation, and architects and designers called for more sense and sensibility.

However, and above all, by now the market had well and truly fulfilled the demands of the post-War years and was becoming increasingly saturated. Consequently, it became necessary to start dividing up mass markets into target groups in order to appeal to them rather more personally with apparently more individual designs.

New Design

1980-90: an avant-garde amongst designers drew radical conclusions from the criticism of this design, which was only functional in practical terms, and went almost to the opposite extreme. However, Italian groups such as Alchimia and Memphis provoked unusual interest at art exhibitions and in magazines worldwide with their anti-functional furniture.

The Memphis Group in particular, also attempted to go into industrial production with the new design and to market it. With moderate success. One of the reasons for this was industrially produced ornamentation. In fact, for the first time since Art Nouveau, Alchimia and Memphis had once again developed a new form of decoration. But the more often the "Laminati" decoration was published, the less valuable it appeared as a sign of product differentiation and individualization.

In Germany, the new design was largely hand-crafted. Operations sprang up in backyards in all the larger towns and cities, focussing particularly on furniture and lamps. More than anything else, they were a media event. The topic of art and design was broached in a large number of symposia, articles and on television programs. The movement went by the name of Neues Deutsches Design (New German Design), thought in art categories and failed in as an arts and crafts enterprise.

Designer-Individual Products

1980-today: New Design has had a lasting effect. The conflict between art and industry flared up again acrimoniously, to be followed by a compromise – in theory a poor compromise.

However, product individualization has at least now been promoted to being a generally desirable aim. Since then, individuality, goods with character and product personality, have become fixtures in industrial design's catalog of objectives. Seemingly, the way to achieve these objectives was with designer personalities such as Philippe Starck. Through them, and what is known as author design, it has become possible to sell particularly high quantities of designer-individual products by cleverly differentiating them from mass goods.

But what now appears to be happening is a transition from designer-individual to customer-individual products. For the first time, mass customization promises a principally new opportunity to further segment the markets and differentiate between products, linking the esthetics of individuality to an actual individualization of production. In this way, at least in theory, mass customization can overcome the basic conflict between art and industry.

3 TOOLS AND CONTENT

Whether in future customer-individual production will also open up new avenues in applied arts depends initially on the new technologies.

If we consider computer numerical control (CNC) manufacturing processes from this viewpoint, the first

thing that strikes us is that these new CNC tools are already much more advanced than our ability to use them for design or artistic purposes. Let us take for example the process of translating graphic designs into line grids and using a CNC cutter to transfer the images onto laminates. For example, a joinery near Frankfurt likes to advertise the process using the cliched image of Marilyn Monroe – figure 1.

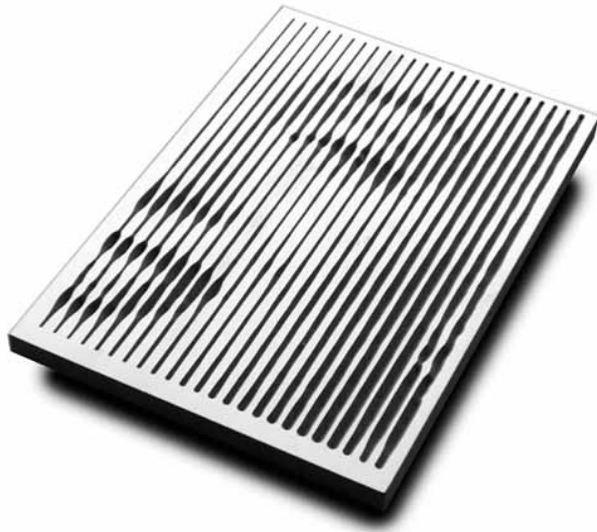


Figure 1: Line grid engraved by a joiner's CNC mill.



Figure 2: Laser engravings on acrylic glass and wood.

Equally, it would be difficult to describe the examples, produced by the Eurolaser company, as art. They simply demonstrate the new dimensions of feasibility – figure 2.

When, some time ago, CNC- equipment was introduced to manufacture mosaic mats by arranging the stones individually following a graphic pattern, only one demo example was available – a smiley. What would the artists who furnished us with such wonderful mosaics as those in the Roman baths have had to say about that?

As we can see, the use made of the new technologies by designers and artists is just about equivalent to somebody banging out nursery rhymes on a concert piano. We have access to highly sophisticated instruments, but what we lack are the requisite compositions and the artists to interpret them. In other words, art customization is less a problem of tools than it is of artistic substance and of training.

4 ART TO USE

Now that we appear to have the technical means for a renaissance in applied art the question of artistic contents that may possibly be guided towards mass customization becomes all the more apposite.

The Post-Moderns

1980: the philosophy of the Post-Moderns prompted renewed interest in history in the fields of art, architecture and design. But unlike in the case of historicism, historical shapes are not simply reproduced,

but reconsidered and quoted with ironical distance. In theory, this represents a new means of justifying this revived interest in all the ornamentation our cultural history has to offer. However, in practice design once again found itself torn between ornamentation and the demands of the conveyor belt. And as long as the Post-Moderns argued on a purely esthetic level it was impossible to come up with any new solutions to the problem.

The Post-Moderns are at a definite disadvantage vis-à-vis the Moderns, whose doctrine was supported by the notion of a modern technology. By his time, however, the Post-Moderns may find a way of further underpinning their beliefs. So from their viewpoint, the new technologies are not only post-industrial, they are also post-modern. For individual production now makes it possible for us to quote cultural history in a completely new way.

The Second Moderns

1990: after the Post-Moderns came the Second Moderns, whose central doctrine is the return to the abstract shape, but with the artist's individual signature. According to Heinrich Klotz: "The new abstraction is no longer the modern art of the geometric shape... Unlike avant-garde art, that finally ended up using calculated geometry and aimed at attaining the highest possible degree of objectivity transcending the individuality of the artist, the new abstraction celebrates the subjective gesture." [3].

In 1999 the concept of the Second Moderns was experimentally applied to design. Examples of the declared motto, "The product as a constructed sketch" [4] included a little cupboard by Tobias Cunz, where the front sections are cut using a laser beam following the pattern of a sketch that has been scanned on – figure 3.



Figure 3: Tobias Cunz, drawers using laser technology.

Reornamentization

2001: a comprehensive exhibition by Fondation Beyeler entitled "Abstraktion und Ornament" (Abstraction and Ornament) [5] uses a concept by Markus Bröderlin to try to retrospectively reinterpret all of modern painting as ornamentation. As long ago as 1993 Bröderlin wrote "The ornamental nature of a large proportion of current (artistic) endeavors lends weight to the assertion that the ornament is one of the keys to an understanding of the 1980s and the 1990s... It would be possible to conclude that in general, contemporary German art has suddenly discovered the ornament." In conclusion, Bröderlin writes that "As a style, art is beginning to come to terms with satisfying certain existing tastes, in the same way that ornamentation is both the expression of and, simultaneously, a way of fulfilling the intellectual and visual needs of a particular time [6]."

A New Pictorial Font

2010: the question of a truly new form of ornament remains open. This kind of approach was hinted at in an exhibition entitled "Elementarzeichen" (Elementary Signs). [7] The exhibition not only contrasted cave paintings and hieroglyphics with the pictographic art of Joan Miro and Keith Hearing, it also placed the latter works in a series of modern pictographs, starting with Otl Aicher. Finally, in terms of perspective, these elementary lines of art have something in common with the visions of a "new pictorial font". Timothy Leary for example says: "A new language is going to be a language of icons, it is going to be graphics". And the principal background to these visions is the graphic user interface on a computer and the new possibilities of manipulating images electronically.

Of course, these processes are not always art-related. We also use pictograms and logograms (word pictures) to formulate representations of language, i.e. figures of thought, patterns of feeling, visual expressions. But at least this appears to be a way of solving the problem of a new and meaningful ornament.

5 REVISING THE THEORY OF DESIGN

If we now assume that not only the technical possibilities but also their esthetic substance allow for a revival of applied art in theory, then the main impediments to art customization are the accepted ways of thinking and the ideals of industrial design.

Adolf Loos, Today

One of the major reasons ornamentation was rejected was a polemic essay entitled "Ornament and Crime" [8], written by Adolf Loos in 1907. However only a few quotations are enough to demonstrate just how shaky the foundations of this classic modern design theory are from today's viewpoint:

"We have art, which has replaced the ornament. After our daily toil and labors we go to Beethoven or to hear Tristan... The disappearance of the ornament has elevated the remaining art to undreamt-of heights."

"The people in the common herd used to have to use different colors to distinguish themselves. Modern man does not require clothing as a mask. His individuality is so unbelievably strong that it can no longer be expressed in items of dress."

"If modern man tattoos himself, he is a criminal or a degenerate... If a tattooed person dies a free man, then he has simply died some years before committing his murder. The urge to ornament one's face and everything within reach is the primitive origin of pictorial art." [8]

New Design Discourses

Today, designer and journalist Walfried Pohl proclaims the contrary: "Lack of ornamentation is a crime". Initially, however, Pohl avoids the inflammatory word ornament, demanding instead the reintroduction of "structures composed of small parts". Taking as his starting point the distinction between macro and microstructures, he describes the Modern style as "an act of self-mutilation" which has banished structures composed of small parts and which the latter were only able to compensate for by overestimating macrostructures and "grand gestures". Consequently, our close-up view does not achieve anything and "looking at something once only exhausts its esthetic information." Additionally, with structures composed of small parts we lose "an almost endless wealth of means of differentiation... Since the disappearance of structures composed of small parts, design and art have an abrupt, gruff relationship with each other." [6]

Another survey of new positions on the theory of design is provided by A.-Chr. Engels-Schwarzpaul in her dissertation: "Myth, Symbol, Ornament – The Loss of Meaning in Transition". [9]

6 VISION AND FEASIBILITY

They say that visions can reach for the stars, but they should keep their feet on the ground. Consequently, after we had the vision of art customization, the first thing that we at the C-Lab did was to conduct a feasibility study. [2]. As well as investigating the scientific foundations of the vision in greater depth, our objective was to work with designers and artists, conducting design experiments on the "pre-competitive" practice of design. At this point however, it is only possible to address a certain number of the facets of this feasibility study.

CNC-Fitting Fonts

One of the most obvious ways of individualizing products is to use personal inscriptions. This method of design is often employed in mass customization. But if we wish to engrave a message on wood or cut it out of a panel or slab, for technical reasons we need new fonts especially designed for the purpose. From the point of view of feasibility, the first question that comes to mind is how to design this kind of fonts and, for example, to integrate them into computer-controlled cutting systems. This is not too much of a problem.

However, after we have done this we can continue to speculate about how, in future, to create a new inscription typography with smooth transitions into ornamentation.

Non Traditional Ornaments

Esthetic questions of feasibility also include that of the kind of ornament suitable for computer-controlled manufacture. One example of this is the following pattern "Chairs of the 80s" – figure 4. This pattern consists of pictograms of the seven most striking chairs of New Design, drawn freehand. It thus also quotes design history but a relatively recent one.

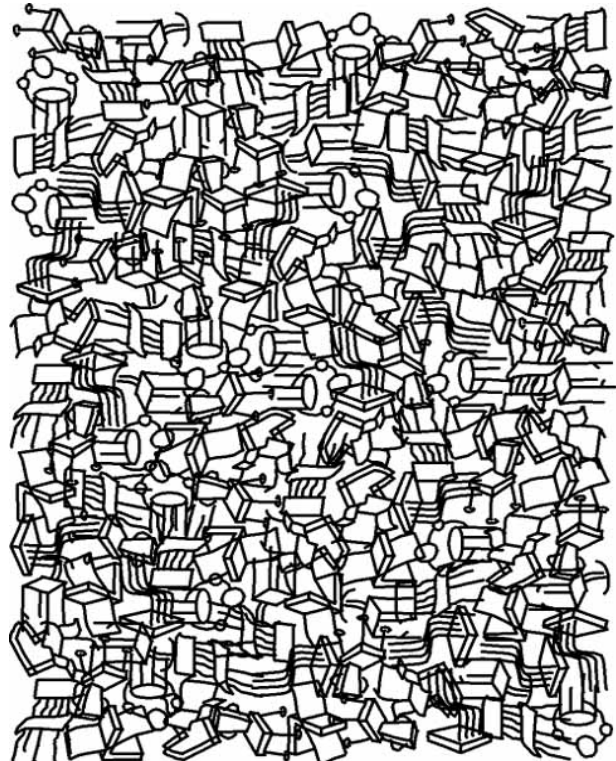


Figure 4: Chairs of the 80s.



Figure 5: Bench engraved with a pattern suited to CNC.

Brush-Embossing

Another example of artistic applications for the new tools is the result of a collaboration between the C-Lab and sculptor Frank Reinecke. The process consisted of taking photographs or water-colors and transforming them into three-dimensional CAD drawings (using software that transposes halftones into contour lines) and then cutting them out to make a relief. Instead of involving lengthy carving work, the artistic process is thus reduced to light brushstrokes – figure 6. This is not only interesting in esthetic terms, it also illustrates a new economy in applied art.

Digital Pattern Books

All designs in which art customization proves feasible – fonts suited to CNC, engravable patterns, CAD/CAM-based reliefs etc. – have one great advantage. We can transmit them via the Internet, change them on the computer, rearrange them and produce them individually.

When looking for such designs however, it now turns out that it was of course much easier to ban ornamentation than to develop a new culture of applied art. As in the past, the academies of art seem to play a particular role in this, as does the establishment of pattern books, in this case, of course, digital "pattern books".

In a renaissance of applied art electronic pattern books could even play a much more significant role than their historical predecessors. For at least two reasons. Digital patterns no longer provide an example for manual work, they replace the latter and, like the sale of virtual products they are of course published worldwide.

AC Modules and AC Studios

But who produces these digital patterns? Who pays for them to be developed? Who varies them and adapts them to the individual wishes of the customer?

First, the software, which allows product configurations for mass customization will ever more contain modules with structures composed of small parts and ornaments –

or will be linked up to digital pattern books, i.e. databases, online. Customization per art will then play a greater role in mass customization – particularly in the more sophisticated forms of individualization and personalization.

But where the focus, let us say of the mass customization of furniture, will shift to applied art we will probably find start-up studios of artists or designers. This kind of art customization studios requires staff and investment in work that is something between handicraft and industry. This means that what will come into being is probably medium-sized companies with a high output, comparable with the manufacturers of the century before last.

7 PROPHECY

To summarize: the term art customization reflects the new technological conditions and the economic changes in artistic production. It considers substantive trends in today's art which could be brought into line with mass customization. It re-examines the positions held by the theory of design and finally investigates the feasibility of the vision through experimental designs.

In view of the above, let everybody judge the following "prophecy" for themselves:

"Sophisticated CAD (computer-assisted design) programs and new composite materials are fueling a kind of re-revival of art nouveau... And what Adolphe Retté, a writer of the original art-nouveau period, described as the condition of his time seems hauntingly similar to our own: 'spiritual anxiety, debris from the past, scraps of the present, seeds of the future, swirling, combining, separating under the imperious wind of destiny'. In another five years or so we just might be neck deep in a period of, well, call it nouveau art nouveau". NEWSWEEK April 24, 2000.

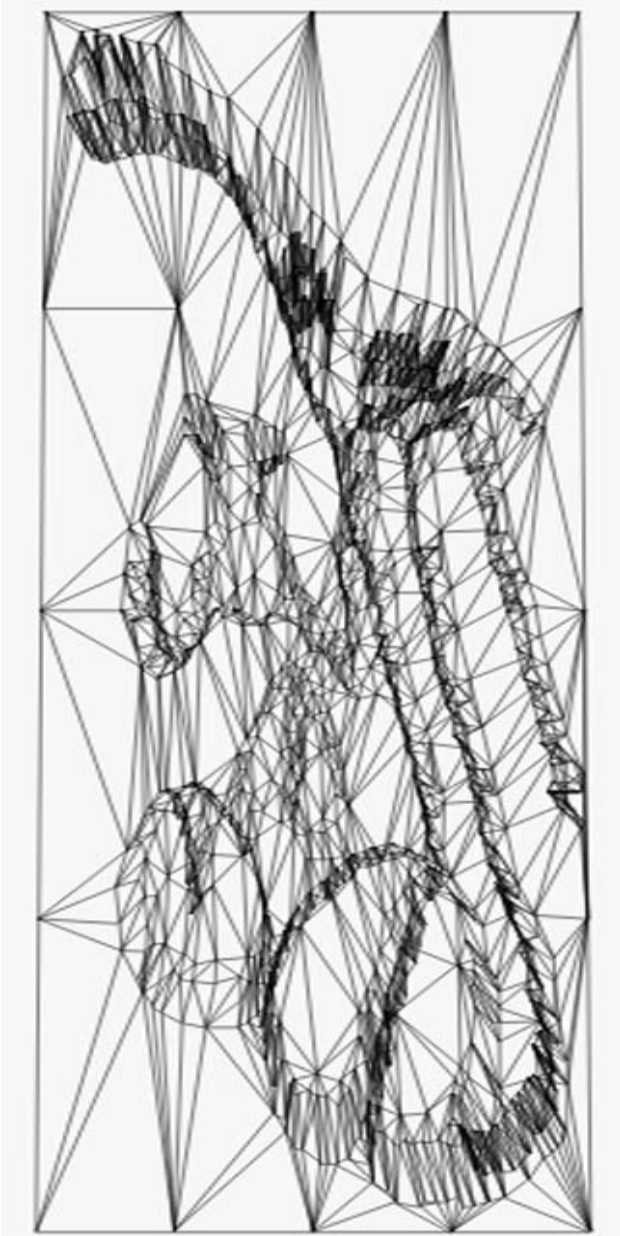


Figure 6: Frank Reinecke, brush drawing of a giraffe transformed into 3D CAD data.



Figure 7: Frank Reinecke, chest, CNC engraving.



Figure 8: Objectile, pavilion, CNC technologie.

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