

Two Different Ways of HfG Ulm: Design for Industry and Design for Humans

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This paper focuses on the separation of the social and industrial pursuits of Bauhaus, which HfG Ulm intends to integrate into industrial design. Bauhaus had a dream of achieving and connecting social ideals with industrial production. They thought that teachers and students could contribute to the social benefits of sharing the fruits of the industrial age by supporting them in producing good quality products that are appropriate for the machine age. HfG Ulm also wanted to succeed the unfinished ideal. The belief in Max Bill's good form and Tomas Maldonado's "design as a scientific process" were never the same, but the background was full of both moral and social pursuits and realization through industry. However, the difference between the studio and the department, the difference between the industrial linkage and the knowledge learning, the difference between the design as the practice and the design as the academic has created the concept of environmental design harmonizing with the environment different from the industrial design which contributes to the industry. Industrial design cannot pursue social ideals, and if environmental design makes market-based judgment, it loses the characteristic of environmental design. Ultimately, the history of the HfG Ulm shows that the social pursuit of design and its industrial pursuit cannot be together.

Keywords: *HfG Ulm; industry; society; environmental design*

1 Two goals Bauhaus wanted to integrate

In 1923, four years after its launch in 1919, Walter Gropius, Dean of Bauhaus, redefined the link between design and industry to present "Art and Technology - a New Unity." In the school establishment program, the word "craft" was changed to "technology," and it became clear that art's place in life would be through industrial technology. Unlike the 1919 program, the 1923 proposal clearly recognized that only machine production, not manual production, would enable art practices in everyday life. In particular, Gropius and his colleagues, with their socialist ideals that rejected the negative influence of capitalism and the poverty of the post-war era, set the goal of producing and distributing art using the technology of the time that everyone could enjoy.

The contradictions of capitalist and post-war conflicts of the time caused people who were in financial and social difficulties to think that revolution was necessary. Marx's political economy provided the critical logic of capitalist contradiction, and many who wanted to

change welcomed the socialist revolution that destroyed the supremacy of Russia. It was generally attractive to pursue social values. Achieving the social value of coexistence in a prosperous society has been understood as an important goal of design. In other words, if we can produce and distribute good-quality products at affordable prices that can be enjoyed by a lot of people, we expect to achieve materially equal social values. It was considered possible to integrate and pursue economic and social goals in design activities. The idea of this paper began with questions about whether it is possible to pursue the goals of industrial performance and social values at the same time.

As a design school, Bauhaus insisted on the integration of art and technology in order to achieve the democratization of art through production methods suitable for the new age. The concept of standardization pioneered by Herman Muthesius of DWB (Deutsch Werkbund) also played an essential part in Bauhaus's attempt to connect with the industry. Bauhaus people made prototypes of a number of products such as lightings, kettles, and steel pipe chairs, and contracted with the industry to produce and supply good products. Bauhaus GMBH was also established to facilitate production and sales operations. However, it is uncertain whether social values were realized. In 1928, Hannes Meyer, a certified socialist, was nominated by Gropius and appointed Dean of the school. Commercial performance during his tenure was doubled compared to the time before his inauguration, but he was driven out in 1930, just two years later. The school had been in existence for too short a time to fulfill what Bauhaus had intended. Moreover, it happened during the period of confusion that led to World War II, after defeats in World War I.

The Hochschule für Gestaltung Ulm (HfG Ulm) opened in 1953, just 20 years after Bauhaus closed, aiming to succeed the Bauhaus in Ulm, a southern city of West Germany. HfG Ulm was not able to last much longer than Bauhaus, and it existed at a time when the 68th movement, which broke up the post-war social order, was ripe and social confusion was intensifying. Nevertheless, HfG Ulm has been documented in the history of design as a school that set up industrial design education courses and as a good example of establishing industry linkages. HfG (school of design), the name of Dessau Bauhaus, was used in Ulm, and Tomás Maldonado, who was the protagonist of HfG Ulm, emphasized that the lesson of the Bauhaus Meyer era should be recalled. The aim of this paper is to examine whether the economic and social values that Bauhaus pursued were truly inherited by Ulm, the successor of the Bauhaus and well known for having created a new order. I would like to look into the possibility of integrating the two values that the designer considers simultaneously: designing for the industry and designing for humans.

2 The Beginning of HfG Ulm and its early achievements

HfG Ulm was founded in 1953 with the purpose of celebrating the sacrifice of the Scholl siblings who resisted the Nazis. The initial plan was to set up a vocational college with various departments, but this changed, and the School of Design was established. It was centred on industrial design and architecture, under the direction of Max Bill, a Swiss designer and architect who was appointed the first dean of the school on its commencement. He headed the construction of the Ulm school building. Bill was taught by Wassily Kandinsky, Paul Klee, and Oskar Schlemmer from 1927 to 1929 in Dessau Bauhaus, and Ulm's new

building was based on the concept of the Bauhaus buildings. He recognized the undeniable principles of industrial production and wished to create purposeful and beautiful products in accordance with the economic and technological conditions of the time. However, his perspective on beauty was unique and powerful, and connected with moral and social values. He firmly believed that he could make life better through infusing a high aesthetic sensibility into everyday goods. (Kapos, 2016) He held a tour of the "Die Gute Form" exhibition, which was based on his belief that he should wage a sacred war against bad form. (Sudjic, 2015) The Junghans watch, which was created through a strong business relationship with Bill, and the simple and functional Ulm Stool, are good examples of Max Bill's aesthetic philosophy.

Hans Gugelot, who designed the Ulm stool in collaboration with Bill, joined HfG Ulm as a lecturer in 1954, on invitation from Bill. From 1948, Gugelot, who received his architectural training in Switzerland, helped Bill in his work. He opened his own office in 1950, designing a panel-assembled module cabinet <M125> that could be modified and extended to fit the user's needs and environments. HfG Ulm's industry-academia collaboration was accelerated by Gugelot's involvement. The Braun Company, which was aiming to restore its postwar business, noticed an increased preference for modern lifestyles in a consumer survey conducted in 1954. As a result, the future direction of the transistor radio, which was its newest product at the time, was defined as "modern, clean and ordinary form, attractive material, bright color, reasonable structure and high technical value." New design development was needed, and Eichler, Braun's design advisor, invited HfG Ulm for the project. The results of the collaboration between HfG Ulm and Braun, led by Gugelot, were presented at the Düsseldorf electronic show in 1955. They succeeded in differentiating themselves against other competitive products with <SK1> radio, <G11> <G12> audio, and many other products. Even the exhibition stand <D55>, designed by the graphic design lecturer Otl Aicher, successfully demonstrated how different Braun was from the other exhibitors. The exhibition stand was a prefabricated and expandable grid that composed the space in a way that beautifully met the conditions necessary for the exhibition, including transportation and installation of the exhibits.

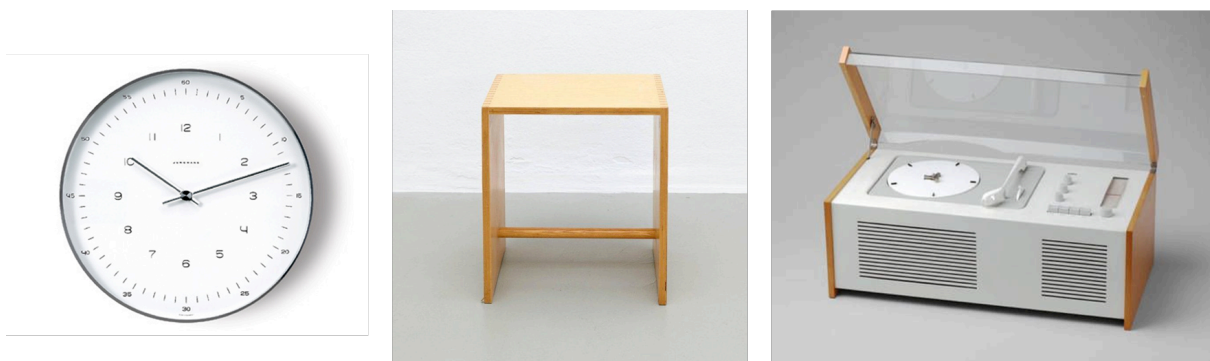


Figure 2. Junghans wall clock (left, Max Bill design, 1957), Ulm Stool (centre, Max Bill and Hans Gugelot design, 1954), and Braun SK4 (right, Hans Gugelot, Dieter Rams, Herbert Lindinger and Otl Aicher design, 1956).

In 1956, a turntable <SK4> was developed which replaced the wood traditionally used in household audio equipment with bent steel. It incorporated a thin and transparent Plexiglas

cover, in addition to the metal plate body, which achieved a high level of aesthetics by revealing the neatly arranged functions within. Buttons, levers, and indicators were arranged in a designed grid, following vertical and horizontal function-centred visual principles. The layout of the control panel <SK4>, which was designed by graphic designer Otl Aicher, is a well-known illustration of the principles of modern functional design in the following areas: honestly showing interior devices, grilles, and materials which were earlier covered with wooden boxes in keeping with the stereotype “audio is a furniture;” placing the main focus on the use of the product and getting rid of additional embellishments. One surprising feature of <SK4> is that even though it has no decorative elements, it gives the impression of an attractive fancy object because it conveys a brilliant and sophisticated feeling. It is ironical that <SK4> has become a collector’s item for those who still adopt a functional style and enjoy retro objects. It cannot be ignored that the initial orientation of HfG Ulm and the influence of Max Bill was the pursuit of “beauty” and the creation of an intense feeling of high aesthetics.

3 Establishment of education model: Attempt to integrate industry and education

As can be seen from the criticism of Hannes Meyer when he left his position as the second dean of the Bauhaus in 1930, it was difficult for them to abandon the early artistic tendencies formed at the institution. However, it is impossible to ignore use, technology, demand, and price when designing a product that is to be marketed with a goal of being used widely. Thus, Bauhaus shifted from early expressionism to modelling for mass production, incorporating essential elements such as production facilities, rules, and educational content. Meyer introduced a more proactive scientific view of contemporary academic content related to the creation and maintenance of objects. However, Max Bill's view was different, even though he was a student during Mayer's tenure. On the basis of HfG Ulm's early motto of artist-designer education, Bill filled half of the curriculum with art education, including morphology, colour theory, and formative theory. Following Gropius' declaration of the integration of arts and technology, Bill's "good form" was also made possible by mass production that used contemporary technology. However, it was very important to him to have artists capable of aesthetic execution.

However, relatively young instructors, such as Tomás Maldonado, whom Bill hired in 1954, criticized the school’s design sensibility as being scientific, not artistic. He also disapproved of Bill for responding to the complexity of the industry with an artistic approach to education with no consideration of the production process. Although Bill wanted to be considered the successor of the Bauhaus model, its founder Gropius publicly pointed out that what Bill pursued was not the Bauhaus philosophy, but more aligned to the craft school of the former Henry van de Velde. In the end, Bill resigned as rector in 1956 and left HfG Ulm in 1957, denouncing the decline of education due to excessive techno-centrism. Maldonado believed that the progress of the Bauhaus philosophy was possible only when it was reconstructed through progressive and original behavioural and educational ideologies, rather than following the educational content of the 1920s.(Lee, 1998) In Maldonado's view, Max Bill was no different from Raymond Loewy, a symbol of American capitalism-based design that

encouraged consumption.(Kapos, 2016) In his view, there was a need for new educational content based on science and the modern era.

The core of HfG Ulm was industrial design, which creates products for mass production. Maldonado presented three new perspectives for industrial design at the Brussels International Fair in 1958: aesthetics, economics, and engineering. (Maldonado, 1958) Ironically, the aesthetic point of view was to insist on ignoring aesthetic significance. Instead, it emphasized that the elements of other industrial production should be considered as basic. He also emphasized the importance of function and market by referring to the need to recognize use value and exchange value from an economic point of view. He believed it was necessary to consider productivity and new technology utilization from an engineering point of view. This perspective led to the reorganization of the new curriculum, and in particular, preparation for coping with the complexity of industrial design. It paved the way for the emergence of scientific theoretical education and courses such as artificial intelligence, game theory, operations research, and ergonomics. A new design education program was created, called the Ulm Model. It combined theoretical education based on scientific perspectives with practical training linked to “development groups” in response to industry referrals. After finishing the first year of the common foundation course, students received specialized education in one of four different departments.

4 Expansion of industrial linkage: Industrial design contributing to industry

The establishment of the Development Group however, was in fact a separation of education and industry. Students also participated, but the Development Group had additional freelancers and operated like an independent design agency. Part of the Development Group's revenue was deposited with the school foundation, Geschwister Scholl. This structure was similar to that of Bauhaus GmbH and the Bauhaus workshop. However, in Ulm there was a stronger independence of development apart from education, because the curriculum was department-centric rather than workshop-centric. The Development Group was established according to the design field, as if the school initiative was created in response to the field. Gugelot led group E2, focusing on home appliance development, Walter Zeischegg's group, E3, focused on small objects, Aicher's group, E5, focused on visual identity, and Maldonado's group, E6, focused on industrial products and product control.

After the Development Group was established, Braun asked HfG Ulm to establish Braun's comprehensive visual identity, from identity analysis and packaging design of audio product lines to user manuals, catalogs, letterheads, and exhibition stands. Gugelot and Aicher submitted a research report on the matter in 1959. Herbert Lindinger, a disciple of Gugelot, designed the hi-fi module system <F11> and <F12> as a graduation project from 1957 to 1959. Like Gugelot 's modular furniture <M125> and Aicher's exhibition stand <D55>, the concept of modularity and extensibility was applied to this audio system. It was a new prototype that included a reel tape recorder, tuner, and amplifier. <F11> and <F12> had many similarities with <SK4> in terms of its interface, cubic form, and systematization of elements. However, while <SK4> was a single product in which all the elements were integrated, <F11> and <F12> were very different in that they could be regarded as individual

nodes of a network of extensibility. Lindinger's design was not commercialized until 1962, but then went on to become the basic concept of Braun's audio product line in the 1960s.

Braun founded the in-house design organization in 1961, and Dieter Rams was appointed its department head. From Braun executives' point of view, it was a long-term business decision that would gradually convert the external support provided by HfG Ulm into an internal capability. The distance between Braun's location in Frankfurt and HfG's in Ulm was also a problem. The CI and PI plans created with the help of Gugelot and Aicher lay the foundation for the independent operation of the design department. Naturally, since the design organization was established inside the company, the industrial relationship with HfG Ulm officially came to an end. However, Gugelot continued his relationship with Braun, leading to the success of the Düsseldorf exhibition, grooming the newcomer Rams, who had been recruited as an interior designer, and contributing to the overall design of Braun products. It can be seen in many instances that Rams was greatly influenced by Gugelot, (Lee, 2012) but their relationship was not viewed as one between a teacher and student. At times, their conflicting opinions were considered on the level of equals or peers. For example, when Rams suggested the idea of a clear Plexiglas cover for SK4, and Gugelot insisted that the part should be metal, Braun's management adopted Rams idea. Since then, the transparent cover has become typical in this kind of turntable, proving that Rams' idea was appropriate. Rams did not put much weight on Gugelot's role when he had the opportunity to describe Braun's history.

Gugelot, who had experience setting up his own office and product development business before teaching at HfG Ulm, led the industry-university collaboration of HfG Ulm. In addition to his success with Braun, Hamburg's subway project with external freelancers was also successful. His Development Group, E2, also designed a wide range of products for companies like Agfa, Bofinger, Pfaff and Kodak, that included sewing machines, trains, cameras, copiers and slide projectors. In 1962, he moved his office outside the school and established "institut für produktionsentwicklung und design e.v." (Gugelot Institute). As a member of the institute, Lindinger, who became a professor at HfG Ulm after graduating under the guidance of Gugelot, was involved in designing Braun products. The relationship between the institute and Braun was more like a relationship between a design agency and a company than like one between a school and a company. Even though Marianne Brandt, who did magnificent metalwork as a teacher and designer in Bauhaus, left the school, the students at the Bauhaus continued to develop historic lighting devices based on contractual arrangements with Kandem. Compared to that, Gugelot's influence was very large and much more personal in the relation between HfG Ulm and Braun.

Aicher's Development Group E5 designed chair advertisements for Herman Miller, an American furniture company, posters for the Deutsches Museum in Munich, color systems and Hannover Trade Fair exhibition stands for the BASF chemical company, CI programs for Lufthansa Airlines, cosmetic packages for Durodont, and so on. Maldonado, along with Gui Bonsiepe, designed products for office equipment company Olivetti and medical equipment company Erbe, as well as the symbol system for display and controls of electro-medical instruments.

This independent activity of the Development Group made the school-industry link seemingly strong, but it is difficult to claim that the Ulm Model, which was trying to harmonize theoretical and practical achievement, worked properly. Companies quickly recognized that

HfG Ulm's capabilities delivered business benefits such as enhancing product competitiveness and increasing production rationality. This was also true of Kandem, who had contracted with Bauhaus, and it was clear that any form of industry-academia collaboration would only utilize the relationship with the school appropriately when it met business objectives. In addition, the professors who worked in the Development Group were unable to resist the temptation of rewards from the project, so they focused more on external projects to the neglect of their educational responsibilities. The students complained that it was difficult to meet instructors, even in class, and that the practical guidance sessions did not work well. Furthermore, design practice was separated from courses based on scientific theories, and did not match students' interest in society and social design. It was gradually evident that the curriculum of the school could not nurture the desired talents in the practical field. In the end, the activities of the Development Group were not recognized as university research activities, and the German government stopped funding the school. Bernhard Buerdek pointed out that one of the reasons that HfG Ulm closed its doors in 1968 was that the school did not play a role in research and development. (Burdek, 2005)

5 Another pathway of function, the birth of environmental design

Unlike the seemingly active linkage to external industry, the internal process of establishing a new curriculum was not easy. With the introduction of the Ulm Model and the implementation of new curricula, instructors such as newly recruited mathematician Horst Rittel and sociologist Hanno Kesting supported the new direction that design should be based on science rather than art. However, their belief in science was beyond the forbearance of Maldonado. They thought they had to design objects using scientific methodologies that were rigorously based on mathematical computations and analytical studies. They even believed that unproven items should be erased from the framework of thinking. In their point of view, "value" lacked a rational basis, so they sought to remove all irrational, normative, ethical, and political elements from the design process, not to mention the realm of beauty.

Maldonado realized that they had fallen into methodolatry but was already embarrassed by the possibility that a coup attempting to overthrow the regime could take place within HfG Ulm's decision-making structure, where dissenters had become numerous. Since 1960, three young professors, including Rittel, had served as deans. Students also objected to that situation. In 1962, about half of the students signed the following documents: "After four months of study we are deeply disappointed. [...] Teaching and research are not simply connected, for the institutes, of course, are taboo for the students. [...] We do not want to become sociologists, or physiologists, and certainly not structural theoreticians, statisticians, analytical thinkers, or mathematicians, but designers!" Maldonado, Aicher, and Zeischegg changed the rules so that the group presidency was lifted and only a designer could become a dean. After Aicher was appointed the new dean, he was able to regain control of the school, remove several science subjects, and restore practical content.

The curriculum determined the nature of the school, and it also embodied the ideological expectations that people had. Since the Bauhaus, people associated with HfG Ulm were concerned about the function, role and method of design. The main task of the academy was

to set up a theory, to reflect it in practical education, and to revise the theory according to the outcomes. In 1963, Maldonado wrote in the Ulm Journal 8/9 that they needed to recall the value of the Bauhaus to discover the HfG Ulm way. He argued that Meyer's Bauhaus, though unsuccessful, had searched for a social role to correct the inhumanity of technical civilization. Based on that lesson, he suggested that HfG Ulm should try social transformation with the entire human environment as its target. (Maldonado, 1963) In Ulm Journal, 10/11, published in 1964, Maldonado and Bonsiepe addressed the limited function of science in the field of design, suggesting that both fantasy and method were necessary, and that there was a need for dialectical tensions between the two. (Silva Paiva, 2013) It was a gradual approach to balance the influence of science in design.

However, HfG Ulm was gradually losing the power of innovation. In 1965 Gugelot died suddenly, and in 1966, Aicher left for Munich. Maldonado resigned from HfG Ulm in 1967, when criticism of the Vietnam War became scandalous. After resigning, Maldonado, in his reminiscence of HfG Ulm, acknowledged the failure of functionalism. (Silva Palva, 2013) Though he thought that the problem would be solved with his good intentions, the task of design was much more complex and subtle. In the same year, Abraham Moles, a sociology and psychology lecturer at HfG Ulm, published a theoretical explanation of the contradictions of functionalism in the Ulm Journal 19-20. (Moles, 1967) Ultimately, the realization of functionalism implies that things need to be optimized to meet human needs, leaving only what is necessary. However, functionalism cannot be achieved because the desires of modern affluent society differs from the philosophy of functionalism. In fact, as the Braun case shows, the more designers pursue product functionality, the greater the market competitiveness of the product and the company - creating an imbalance between production and demand. In the end, social optimization becomes impossible. In other words, if functionalism is applied industrially, it is a paradox that whatever intention and form it takes eventually becomes part of the business and loses good purpose of functionalism.

Maldonado then lectured and delivered seminars for three semesters at Princeton University and formulated his ideas into Environmental Design (Umweltgestaltung). It included the ecological aspects that had begun to spread at the time, not as a collection but as systematic and structural integration as Gropius' Gesamtkunstwerk architecture. The premise was that it should have macro perspectives, not individual product dimensions, in order to solve the holistic nature of functions and interconnected human problems. It was also intended to encourage industrial designers to aspire to contribute to social transformation by restructuring the environment from its passive auxiliary role in a consumption-oriented society to proactively encouraging consumption. (Warmburg, 2017) Maldonado's Environmental Design evolved the notion of functionalism based on Bauhaus's production and social ideals, expanded the scope of function and made the concept clearer.

In addition to Maldonado, the concept of environmental design was welcomed by a number of HfG members, including Gui Bonsiepe, who confronted the idea that it is difficult to achieve social consideration due to the conflicting commercial demands of industrial design. Though ideas about environmental design are not exclusive to HfG Ulm, Maldonado, and Bonsiepe, it is clear that they are responsible for one axis of the discussion. After Ulm closed, from 1969 to 1972, Stuttgart University operated the Institute for Environmental Planning in the HfG Ulm building. Following Princeton University, Maldonado contributed to establishing Environmental Design as a subject at Bologna University and Politecnico di Milano University in Italy. Ezio Manzini author of the book "Design, When Everybody Designs: An

Introduction to Design for Social Innovation,” taught PhD students from 1996 to 2009, following Maldonado in Politecnico di Milano. He organized the DESIS (Design for Social Innovation and Sustainability) network to explore further practical approaches to social design.

6 Separation of design for industry and design for humans

The industrial and social values initiated by Bauhaus can be seen as a conflict between practice and theory. Maldonado tried to write a practical and systematic manual on environmental design, but after his time at Princeton, he turned to theoretical discussions on the subject. The reason for this was that he estimated the level of environmental design to require political dialogues rather than micro manuals. In other words, if the concept of industrial design discussed at Bauhaus and HfG Ulm is a question of use and sale, environmental design is a matter of ideology, and they are not on the same dimension. Again, environmental design was a social and theoretical matter. The academic way, another consequence of HfG Ulm, took a completely different direction from the industrial way.

Industrial design involves design for industry, designs that can increase market value for industry players. On the other hand, environmental design refers to designs that take holistic environmental conditions into consideration for human beings in natural, artificial, and social environments, rather than a one-dimensional ecological consideration. As Moles said, the idea of accomplishing social ideals through the expansion of production in a capitalist system was good but naive. Industry was a matter of survival and a matter of practical solutions, but it was not able to connect with social ideology. The form of modernism that Bauhaus sought through Kandem, and HfG Ulm sought through Braun, was also of interest to many other companies and is still popular today. However, we cannot explain the cause of the popularity only by the characteristic that the form is functional. Sustainability of objects is only possible when they are in harmony with social, economic, political, cultural, productive, circulating, material, personal, and even natural conditions. Of course, it includes vanity of being unrelated to traditional functionalism and a desire for kitsch. This is because it is one characteristic of being human. The idea is now spreading gradually that function is related to the surroundings, as Maldonado believed, and furthermore, it is contextual. If environmental design is sometimes understood to mean only the surrounding environment or be defined in a narrow sense of ecological consideration, the new design sensibility may now have to be called “connectivity design” or “context design.” Thus, HfG Ulm’s intentional and accidental attempt can be said to be a clarification of the meaning and limits of industrial design and an opportunity to embody the concept of new design thinking.

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