DRS2016
Design + Research + Society
Future-Focused Thinking

2016 Design Research Society
50th Anniversary Conference
27-30 June 2016, Brighton, UK

Design Research for Sustainability: Historic Origin and Development

Astrid Skjerven

Oslo and Akershus University College
Astrid.Skjerven@hioa.no

Abstract: The paper presents a historical flashback and analysis of how design research traditions have developed. They have comprised both theoretical and practical methods, and has undergone several stages, with shifting emphasis on the two. Our own era's belief that it has been mainly based on experience and a discourse through products, is a myth that has created unnecessary barriers towards traditional academic research. The profession has been dominated by a holistic view that combines human culture and the natural environment. The paper demonstrates how design research in a multidisciplinary setting may become a decisive factor in the development of sustainability of culture and environment.

Keywords: Design research; Historiography; Multidisciplinarity; Sustainability

1. Introduction

The work for a sustainable development that explicitly comprises not only physical, but also cultural matters, is a relatively new occupation. It has many "white spots" on the map of knowledge and understanding. This can only be improved by better cooperation between various professional fields. It requires information from a variety of subject areas, from the natural sciences to cultural, philosophical and practical fields, put together in order to create a broader picture of the problem and thereby a fruitful result. There is need for methodologies which exceed the traditional paradigm of academic research. This has paved the way for the including of contributions from the creative and artistic fields, with their holistic views and complex paradigms of knowledge production (De Beukelar and Duxbury 2014). This fact makes knowledge in the field of design, which aim is to create evironments for a better quality of life, of particular relevance. The birth of the designer profession has its origin in the Industrial Revolution, the event that started our own era's problems of sustainability in all its dimensions. It has always been engaged with questions related to

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sustainability and the human environment and living conditions, thereby taking cultural matters into account.

Although basically a practical profession which goal is to create concrete objects and environments, with according research and development methods, the profession has always had a theoretical and methodological foundation, and a professional discourse. Thereby it fulfils the official definition of research (Norsk institutt for…2006). However, because of its practical and sometimes utopian approach, it exceeds the methods of traditional academic research. In this way it makes a valuable contribution in the matter of research for a sustainable development.

2. Historic origin

The designer profession's concern with issues of sustainability has a long history. The birth of the profession and its emphasis on research was actually a consequence of the need to solve problems of this kind. It originated as a response to the Industrial Revolution in the 19th century, which was the starting point of today's environmental problems. The industrialization of the production methods and the following urbanization made it possible to produce in large quantities and at lower cost, thereby making them available for a larger part of the population. But it also caused low aesthetic standards on the goods produced. They were regarded as unskillful imitations of hand crafted products, made without cooperation with the potential users (Pevsner 1936). It also led to exploitation of natural resources, and overcrowded and highly polluted cities with poor living conditions for the lower classes, and the exploitation of natural resources. There was need for a new profession that could improve the standard of the products and contribute to a better life in harmonious surroundings fit for the emerging modern era. In order to find solutions to these problems the new profession had to be research based.

Most of the first generation of designers were idealists. Many of them were "utopianists". Increasingly from 1890, modernist artists and designers were committed to a holistic vision of art and society, and so believed in the need for a beauty and morality to be fundamentally conjoined (Greenhalgh 2005). They wanted to create living areas shaped like idyllic villages or garden cities outside the big industrialised cities. They were often built on historic sources, some of them medieval. The homes should be spacious and decorated with beautiful objects. This should enable a harmonious life to take place (e.g. Morris 1890). Aesthetics was not regarded as an aim in itself, but as a means to create a meaningful life. The craftsman William Morris' movement from the polluted city of London to a nearby village and his erecting of a home and workshop built on medieval ideals is a good example of this.

The philosopher John Ruskin focused on another aspect of human conditions in the new era: the distance between the new industrial worker's individual relation to the production process. The work methods were efficient, but mechanical and repetitious. The stonemason's work on the cathedrals in medieval times, where each person's physical and individual encounter with the material were put forward as an ideal (Ruskin 1849). He put forward a seemingly outdated work method and pointed to the qualities attached to it that easily could be forgotten and had to be taken care of for the sake of a meaningful life. He was thereby displaying the necessity of cultural sustainability, as we would call it today.

The aim of contributing to a better human life by designing practical, meaningful, beautiful artefacts available at an affordable price (Pevsner 1936) was to become an ideology that has been a leading star for the profession, and developed through the centuries. During the 19th and first half of the 20th century it was believed that products designed to meet these standards would be what people would prefer to buy. It was also believed that such objects had optimal and ever-lasting qualities. This would lead to limitation of consumption, thereby supporting sustainability. The ideology had a flourishing period during Functionalism. It was particularly evident in the Nordic countries, when the leader of the Swedish Design Society was a leading figure, and his creation of the slogan "More beautiful objects for everyday use" (Paulsson 1919). During the post war period, when industrialization accelerated and consumer behavior proved to follow other paths, the ideology was challenged. As a profession working in cooperation with commercial enterprises with different aims and views, compromises often had to be made, and their ideas were sometimes overruled. Their work and the basis for product development has therefore also driven by economic interests which support unnecessary consummation, not quality of life (Baudrillard 1998, Foster 2000). In spite of this, the ideology has survived and continuously had its followers. During our own era it has merged with the idea of sustainability and the according discourse.

Nature, i.e. its forms and organic life cycle, has always been a basic ideal for the designer profession. This is evident in the many theoretical works of the first designer generation of the late 19th century. These works constituted the theoretical basis for innovation, and some were based on systematic research. The most evident example is Owen Jones' seminal book "The Grammar of Ornament", published in 1956 (Jones 1856). By ways of investigations of plant forms he presented a set of "laws" for ornamental decoration. As a standard work in most design education for several generations its message has had a profound and lasting impact. In the 1990s, along with Postmodernism's interest in classical forms and ornaments, the book had a revival and was republished in 1986.

With its focus on aesthetics and research methods exceeding academic standards, design is strongly related to the field of art. The first professional designers were mostly artists who

became engaged in the field. The main difference is that the intention of a practical function always forms part of a design process (Pevsner 1936, Heskett 2002). Fine art has traditionally been regarded as an activity that takes place with a critical distance to society and beyond or "above" social ad practical needs, thereby also refusing the use of academic standards (Heidegger 1935, Adorno 1970). From the period of Romanticism and onwards artists have refused to follow academic standards in their research, and developed their own traditions based on experimentation with aesthetic means. There has therefore always existed a tension between the two professions, despite its many similarities.

In the 20th century, the era of Modernism was dominated by the idea that a better life should be created by the integration of scientific methods taken from the technical sciences in the world of art and creativity. This constituted a basic notion in the idiom of functionalism. One of the many examples is the work of the architect Grete Schütte-Lyhotzky. In order to create an optimally functional kitchen at a minimum of space, she made measures of the housewife's steps and other movements, fetched from American scientific methods (Noever 1992). The unification of technology and art was a basic requirement for innovation during Walter Gropius' reign of the Bauhaus during its early years (Wolford 1984). A Nordic example is Aino and Alvar Aalto's development of a method of making birch plywood that enabled them to produce their famous chairs (Schildt 1984). This was a development of the design community's original ideology, and believed to have the same limiting effect on consumption.

3. From eco-design to design for cultural sustainability

The post war era with its accelerating industrialisation and consumption caused a new wave of concern about environmental problems. Some members of the designer community realized that the profession in many cases contributed to this by designing objects that stimulated increased and affluent consumption. One of the leading figures was the Austrian-American designer Victor Papanek. He argued that the designer should react against the role of being part of this development. Instead he should act as a facilitator for the creation of survival kits and products for basic needs. These products should be produced locally out of reused materials, mainly in and for the so-called Third World. At the same time they should be an ideal for a change of attitude and production in the Western world (Papanek 1971). Papanek won many supporters, particularly in the Nordic countries, which he visited frequently.

The general concern about ecological questions from the 1960s and onwards, followed by increasing academic research on the topic, created a correspondent debate in the design community. Several designers started to develop methodologies that aimed at meeting the

challenge, and buzz words like “eco-design” and “green design” started to flourish. A more lasting and better underpinned approach was that of “cradle to cradle”, which was based on principles found in nature’s organic life cycle (McDonogh and Braungart 2002).

During this era the emphasis was put on physical environmental matters. The next stage of the discourse of sustainable development was a growing recognition of the significance of cultural matters and the importance of developing according methodologies. In spite of the designer profession’s tradition of focusing on human well-being this was realized relative slowly, both inside and outside the design community. This means that the designer ought to make use of methodological tools that could solve these kind of problems. One of the pioneers and leading theoreticians of a holistic approach is the Italian designer Ezio Manzini. He introduced the question of the designer’s role in the creation of social sustainability (Michel 2007), and later and of human resilience in a troubled world characterised by cultural conflicts and increasing migration (Manzini 2014). At present there is a growing comprehension of the importance of ontological and aesthetical traditions as a main ingredient in everyday life, and a precondition for well-being. An important contributor to this is the Japanese-American designer and philosopher Yuriko Saito. Her ideal is the Japanese notion of an organic life cycle that comprises both nature and human beings, i.e. culture. She puts forward the use of aesthetic traditions in contemporary design objects, and their use in everyday life as basic requirements for human well-being (Saito 2007). Phenomenological approaches based on the philosophers Martin Heidegger and Edmund Husserl are also being developed (Wendt 2015). They all point to the fact that a sustainable development is dependent on both cultural and physical matters (Dessein et al. 2015).

Today there is a growing concern for solving the often acute social and environmental problems in urban areas all over the world. Therefore governmental authorities and international organisations have initiated large scale urban development projects. They are normally performed by city planners and scientific experts. But in some of them artists have engaged themselves of been engaged in separate sub projects where they affect and stimulate the citizens to make solutions based on their own cultural traditions and ways of life as well as artistic experimentation (Duxbury 2015, Kagan 2013). Designers have engaged themselves in similar projects. Many of them are related to the creation of sustainability and resilience in the Third World and areas that have been subject to environmental crises. One example is the Norwegian organization “Design without Borders” (Ramberg and Verdu-Isachsen 2012). In opposite to the artistic stance, the profession that does not claim to stand beyond society. At the contrary, they welcome cooperation with commercial enterprises. I this way they are able to be fully included in the projects and cooperate directly with the stakeholders.

4. A research paradigm in transition

In our own era, new knowledge and understanding in the field of design has been believed to be solely practice based, and mainly performed accordingly. In contrast to the academic disciplines, where the discourse is based on the written language, it has been performed as what might be characterized as a discourse of objects (Skjerven 2005). Innovation and alteration of products have been a kind of response or reaction to other products. It has therefore been called "the making disciplines" (Michl and Dunin-Woyseth 2001).

Accordingly, design has been defined as a "tacid knowledge", meaning a competence that is impossible to express through oral or written language (Polanyi 1966). Considered the many oral discussions and written technical documentation that forms part of the design process, this is a viewpoint that focuses on a significant characteristic of the activity, but fails to express the complexity of the activity and its discourse. In the recent years it has been little used in the discourse.

During the last four decades a certain rapprochement between the professional regimes of academic and practice based research has taken place. This is mainly due to three factors. Firstly, the many amalgamations of institutions of higher education that have taken place since the late 1980s has led to an academisation of design education and research. Secondly, the academic world has become less reluctant to alternative practice based approaches and have realised their values. Thirdly, and most importantly, the societal need for solving problems in a troubled world of increasing world of pollution, migration and cultural conflicts has made it urgent to come up with concrete results, whichever research field has been used.

In addition to the basic difference in aims and methods, the barrier between academic research and design is built on the former's traditional requirement of objectively and critical distance between the researcher and the research object, i.e. between objectivity and subjectivity. As for research within the field of design, three different approaches have been identified: research on (e.g. design history), research in (trying out new materials etc.), which both may fulfil the requirements of objectivity, and the controversial "design through". The latter means that the designer makes use of own professional creativity at the same time as investigating a research question (Dixon 2002). One of the first to confront and define these stances and to argument for a reconciliation between subjectivity and objectivity, was Christopher Frayling (Frayling 1993/94). In our own era of late Post Modernism the belief of objectivity no longer exists, and has been replaced by the argument for the use of intersubjectivity (Dixon 2002). This has also led to a reconciliation between the two reigns.

5. Conclusion

Since its birth in the middle of the nineteenth century the designer profession has been research based. It has also been and dominated by a holistic view that combines human culture and the natural environment. From the start it has been focused on human culture and sustainability, both as a cultural and physical matter. It has comprised both theoretical and practical methods, and has undergone several stages, with shifting emphasis on the two. Our own era's belief that it has been mainly based on experience and a discourse through artefacts, with little use of written language, is a myth that has created unnecessary barriers to traditional academic research. Today's increasing demand for multi- and transdisciplinary approaches in order to attain cultural sustainability has made design research more recognized. A full realization of its potentialities needs a better understanding of this fact. Research within design in a multidisciplinary setting may become a decisive factor in the development of sustainability of both culture and the human environment.

In the perspective of the positive results of the enterprises where design research and development has been included, the future should look bright. The growing recognition of the advantages of cooperation between the various reigns of research should add to this. However, there still are some challenges that have to be met. In a situation of economic downturn and decreasing sales, competition is fierce and business enterprises are focused on making rapid profit without regard to future consequences. To some degree this is counterworked by the political authorities' increasing awareness of the global environmental situation and their according measurements in jurisdiction and international agreements. The growing consciousness and knowledge of the significance of the planning of a sustainable physical and mental environment to secure a meaningful life is also an important factor.

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About the Author:

Astrid Skjerven PhD, Professor in design theory at The Department of Product Design, Oslo and Akershus University College, Norway. Special fields of interest: Scandinavian design in a global context, everyday aesthetics, cultural sustainability. Has published articles in books and international scientific journals. Member of the Editorial Board of the journal Sustainable Development, Advisory Board member of the journal FORMakademisk, member of the EU COST Action IS 1007 Investigating Cultural Sustainability, and of the Norwegian Research Council's JPI Research Group.