# DISCOVERING CULTURAL INFLUENCES DURING THE 'SCRIPTING' OF PRODUCTS

## Abstract

The social nature of design education provides an interesting forum when investigating characteristics that are embedded in the designing of products. This paper illustrates one aspect of an ongoing research investigation of industrial design students, their educational context, and the products that are designed. Two case studies are highlighted in this paper, with each investigating the 'explicitly taught' information learned in the student's educational context, and 'implicitly present' information that has been gained throughout the student's life. Case study 1 uses questionnaire and informal interview procedures, and case study 2 uses a multi-method approach with a variety of collection mechanisms (i.e. video taping, photography, sketch book reviewing) documenting an eight-week design project. Insights are hereby gained into the social and cultural forces that influence the 'scripting' of designed products, which it is envisaged, will provide a more holistic understanding of the design process, design culture, and the education and socialisation of design students.

*Keywords: Design Education, Design Understanding, Experiential Learning*

## 1 Objectives

Design is known to be a highly creative activity that involves the production of something 'new', the result of recombining, referencing and transforming within a specific context. Design students encounter a wide variety of influences and inspiration during their education. Moreover, the knowledge and skills required and utilised whilst studying design encompasses both explicit and implicit information types. This paper represents an ongoing research project that explores the iconic, social and cultural influences among undergraduate design students. Using two different types of experimentation techniques, this paper's main objectives are:

- to explore the industrial design process described here as the 'scripting' of products;
- to investigate to what extent a student's design influences, and subsequent product creation activities, are affected by their educational context and their personal experiences;
- to identify significant personal experiences supported and advanced in design education settings.

This project involves 1) the study of design students, 2) their design education studio, 3) their educational context, and 4) the products that are created. Understandably, a research topic that involves three distinct components – subject, object and context – is far too broad to explore in totality in this setting. Therefore, the focus here is on the subject (i.e. design student) and the process towards creating a product (i.e. activity between the subject and object). Two case studies are examined in this paper, each illustrating more than one study. Both case studies are comparative to cross-reference and examine different settings and

cultural contexts. In addition, each are studies involving industrial design groups at Napier University, Edinburgh, UK (BDes *Design Futures &* BSc *Industrial Design*) and at the University of Alberta, Edmonton, Alberta, Canada (BDes *Industrial Design*).

# 2 Background

Recently, there have been a number of research projects in design involving creativity in design (Oxman 1994, 1999; Vihma 1998), inspiration in design (Rodgers and Milton 2001; Eckert 2000, Eckert and Stacey 2001), analogy in design (Leclercq and Heylighen 2002) and memory in design (Goldschmidt 1994). Primarily, this work and other research in the area of creativity takes the theoretical position of cognitive psychology (Liep 2001:2) whereby there is a desire to formalize design thinking which focuses largely on the 'minds' of the individual creator(s). These studies represent a wide variety of approaches including laboratory experiments (Leclercq and Heylighen 2002) and naturalistic experiments (Heller and Pettit 1998; Rodgers and Milton 2001). Leclercq and Heylighen (2002) explore analogical thinking used by architectural design students by providing a set of variables that are measurable quantitatively. Naturalistic experiments use combined methods of data collection to collect information under relatively natural conditions (Bryman 2001). Heller and Pettit (1998) and Rodgers and Milton (2001) both utilize informal and formal interview procedures that are open-ended to differing degrees, to collect non-specific and specific information respectively.

In laboratory and naturalistic experiments, the measurable traits are reduced in order to simplify the design process to recognizable, more quantifiable details. The above body of research provides a foundation on which to create an ethnographic research project that engages and informs the multi-dimensionality of design learning. It is clear through the above research that the design process and the design information conveyed by students are difficult to measure. The next section provides a description of how students are perceived to engage in the design process. This provides the context of 'scripting', which frames the two case studies discussed later in this paper.

## 2.1 The 'scripting' process

Designed products are conceived, discussed, and planned before they are made. Design is part of a social process in which designers and many other individuals make decisions about product development, manufacture, distribution and consumption of individual products. While products are the result of human decisions, the subject of design itself is not fixed; design is constantly undergoing exploration and continually evolving.

This paper explores the design process by using the metaphor that a product is 'scripted' like a film or story, from start to finish. By making use of the 'scripting' metaphor, the design student and his/her process is looked upon in a unique way, thus providing a means to describe designing as a narrative. A narrative can be described as a continuous story or account that is spoken or documented, and connects a series of events or experiences. One design student described her narrative as *going on a journey* [1] and created a model of the earth with significant places and people displayed in this journey (Figure 1).

[1] All quotes from participants in my field research used here are italicized and kept in the body of the text, to distinguish participant quotes from book quotes.

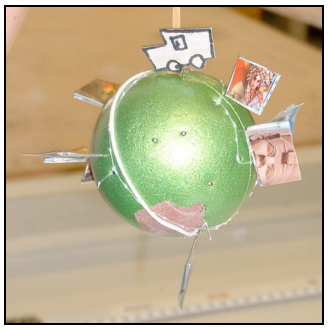


Figure 1. Design represented as travel

The design process is a journey, towards the development of a product that has a traceable narrative that can be retold like any other story. This narrative is not necessarily linear and cannot be scientifically exact since the researcher will never know the details of what is contained within the creators mind.

## 2.2 Explicit and implicit information

The individual and collective narratives of design are traced to reveal the information that holds meaning about the social and cultural nature of design. Design narratives are "thick descriptions" (Geertz 1973) that contain micro- and macro-issues relative to the individuals, socially constructed environments and cultures of Western civilization. 'Explicitly taught' information learned in the student's educational context, and 'implicitly present' information that has been gained throughout the student's life is each examined. Explicitly taught information is easier to get at, and done by examining the educational setting and tracing verbal and textual information provided by tutors. Implicit information is difficult to define and even more slippery to explore. This paper defines implicitly present information according to Pierre Bourdieu's discussion on "cultural capital" (1984). Bourdieu writes that social and cultural constructs are inherent to all individuals and groups. One way to get at "cultural capital" is to engage in the narratives of individuals.

## 2.3 Individual experience

Product 'scripting' is both verbally and non-verbally communicated through a narrative of visual and textual information, and verbal discourse (Figure 2). This multi-layered communication process provides excellent access to the "cultural capital" of design students. Through this, the information can be sorted into being either explicitly taught or implicitly present information sources.

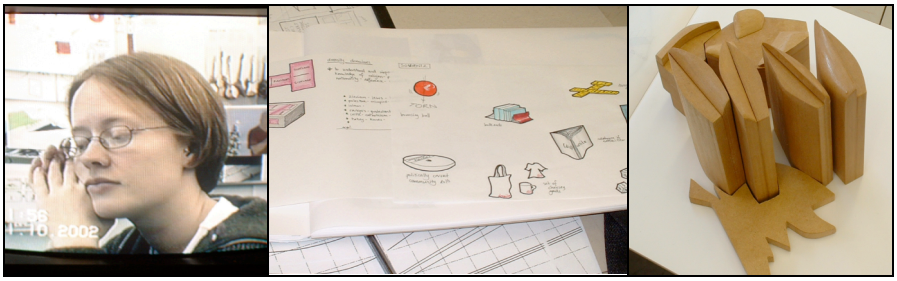


Figure 2. Design narrative as verbal, textual and visual

According to Alvesson and Sköldberg, "experience is fundamental … something with which every exploration of reality or mental processes must start" (2000:55). Personal experience is recognized as being part of and intrinsic to the design process. Nigel Cross defines the design

process as "…heuristic: using previous experience, general guidelines and rules of thumb …"(2000: 29). The individual narrations of product 'scripting' document personal experience as one of the key elements in constructing a script. Bourdieu believes subjective experience is far from being an expression of a unique ability to have aesthetic judgement (Wacquant in Stones 1998:223). Bourdieu further describes individuals' as acquiring "cultural capital" through osmosis and then passing this on to material culture (1984). "Cultural capital" is embedded in each person and is always carried into all information they convey, and all objects they design. The outcomes of the 'scripting' process are therefore interwoven with personal identities, cultures and society.

# 3 Methods

## 3.1 Case study 1

Case study 1 illustrates two separate studies, done in 1999-2000 and 2000-2001. These were conducted using naturalistic experimentation techniques. The research methodology employed was an informal interview and questionnaire procedure with a sample of undergraduate students at two formal educational institutions in two different countries, Britain and Canada. The students were interviewed independently in a semi-structured manner within their studio environment. There was an attempt to balance gender when choosing students for their independent and direct interviews. Each student was asked eight questions with several control questions. The questions were a reflection of both explicit and implicit information sets and were in the form of the following key words; building, product, author, vehicle, movie, music, magazine, and designer. Students were asked to relate one example for each key word, from the past or present that inspires or informs their present design work. All information gathered are considered indirect design transference sources of inspiration (Strickfaden and Rodgers, 2001) since there was no attention given to the particular projects that the students were engaged with at the time of the studies.

## 3.2 Case study 2

Case study 2 takes a broader approach towards accessing the variety of information conveyed by the students. A focus on postmodern ethnographic approaches in case study 2 has been used to get closer to the social and "cultural capital" that influence the 'scripting' of designed products. Postmodern ethnography or 'new ethnography' (Denzin and Lincoln 1998) is focused on experience. A great deal of information can be gained through postmodern research approaches, for example, the participant-as-observer approach used for case study 2, focuses on experience and process therefore allowing the design students to tell their personal narratives. The narratives discussed in this paper are taken from the first in a series of four studies at two different institutions in the UK and Canada that began in the autumn of 2002. Twenty-three final year undergraduate students of Napier University were selected to participate in the first eight-week study.

The multi-method approach of case study 2 uses observational techniques, which include informal interviews, questionnaires, and photographic documentation. To support this, a variety of collection mechanisms are used - videotaping, photography, sketch book reviewing, and note taking. By combining observational techniques and questionnaires, the natural flow of ideas is focused upon by looking at the participant's individual backgrounds, their experiences, and their general thoughts on design.

# 4. Case study 1

Case study 1 focuses on two short studies that were part of a larger series of studies. The initial studies focused on 'inspirational sources' and took place in at the School of Design and Media Arts at Napier University. In these studies, Rodgers interviewed a total of 29, and then 35 first year students respectively. The primary objective was to explore whether a relationship could be found between a design student's level of design awareness and their design degree performance (Rodgers and Milton 2001). The second set of studies took place a year later at the University of Alberta in Canada. Strickfaden interviewed four groups including 18 third year, and 23 fourth year industrial design students at the University of Alberta. The primary objective of this second set of studies was to cross-reference and compare iconic sources of inspiration among British and Canadian students. The responses of the students involved in the preliminary comparative studies were recorded into spreadsheets where gender, age, country of origin, and frequency of responses were noted. One interpretation of this comparitive research project involving all groups examined is published in the CD proceedings of the *Common Ground Design Research Society International Conference* (Strickfaden and Rodgers 2002) and will not be detailed in totality paper.

Case study 1 is made up of the two most comparable groups of students from the UK and Canada. These involve the senior students since it is clear that in general, these undergraduate students answered with a more specific and detailed response. The senior design level student responses are more reflective and individually specific, therefore most appropriate for this investigation.

## 4.1 Results

Responses from each student, in all cases in case study 1 are wide ranging, with similarities displayed among students and indication of extreme individuality. The similarities between responses in each group were surprising despite different geographical locales and degree programmes that are, from the outside, quite different. These similarities can be attributed to design culture (Julier 2000) being embedded predominantly with 'Western' societal values, the result of increased globality (Beck 2000), and mass media's "visual encyclopaedism" which includes imagery from many cultures, past and present, from all over the globe at a touch of a button (Woodham 1997: 190). Examples of the common responses from both the UK and Canada studies include high profile building design such as *Falling Waters*, the *Eiffel Tower*, and the *Guggenheim Museums* ; well known "high design" products (Julier 2000) such as Starck's *Juicy Salif*, Apple's *iBook* and *iPod*, and Alessi's salt and pepper shakers; popularised and cult movies such as *Bladerunner*, *Star Wars*, *Pulp Fiction* and *Braveheart*; and designers such as Ron Arad, Frank Gehry, and Philippe Starck. In general, it was unclear whether the student's responses were directly related to their personal interests, or simply responses that the students thought would be considered desirable within design culture or to the researchers.

The student responses are further categorised in order to determine which responses were 'explicitly taught' in the educational context, and which responses were 'implicitly present' and deriving from the students "cultural capital". Many of the common responses from above can be placed into the category of having been 'explicitly taught' to the students. The category, their relationship to either explicit or implicit information and whether they are made occasionally (◊), average (◊◊), or strongly (◊◊◊) in the educational context is detailed in Table 1.

Table 1 explicit and implicit information

| | Inspirational Source | Explicit | Implicit |
|---|---|---|---|
| 1 | building | ◊◊ | ◊◊ |
| 2 | three-dimensional product | ◊◊◊ | ◊◊◊ |
| 3 | author | ◊◊ | ◊◊◊ |
| 4 | automobile/vehicle | ◊ | ◊ |
| 5 | movie | ◊◊ | ◊ |
| 6 | music | ◊ | ◊ |
| 7 | magazine | ◊◊ | ◊◊ |
| 8 | designer including architect | ◊◊◊ | ◊◊◊ |
| ◊◊◊ = strong ◊◊ = average ◊ = occasional | | | |

At this stage, the majority of the responses were considered to be inherently implicit demonstrated through Table 1. An interest in understanding the student's educational context and their "cultural capital" developed due to this and while analysing students responses to the questionnaires. "Cultural capital" was determined as including, the student's gender, their age and personal experiences, and their geographical conditions.. Many of the responses are extremely personal in nature. For example, many students responded to the keywords 'designer' and 'artist' with the names of family members or friends who were involved professionally or non-professionally in these disciplines. These individuals felt strongly that the *real people* had influenced them to a greater extent than those in books and in magazines. Similarly, for the category of building, a high number of students responded with local architecture. Further indicators of "cultural capital" emerged in every category. Examples are; for the query 'product' one student said *saddles for horses, they are beautiful and functional*, and another student responded by saying she thought *the keeper menstrual cup was very well designed because it is user friendly and considers environmental issues.* For the query 'vehicle' one student responded with *German trains are the coolest vehicle I have ever been on*. Finally, for the query 'author' the majority of student's responses were those who had written popular children's books, such as Roald Dahl, C.S. Lewis and Dr. Seuss.

Due to the varied nature of the responses and percentage of ones that are experientially-based, it was determined that further research and a modified research methodology was required in order to get to the roots of the design process as a collective, social process, not just one that is enacted by individuals.

# 5 Case study 2

A multi-method approach is known to create a meeting and meshing of different boundaries for a given topic which enables questions to be posed in different ways (Shakespeare *et al* 1993) and is considered to be a reflection of postmodernism, the era that we are said to be living in at present. It is perceived that a more in-depth study used for case study 2 reveals additional patterns, and provide a clearer understanding of how design students engage with the 'scripting' of products.

The first studies of case study 2 began at Napier University by Strickfaden, which first involved querying personal details about the students', and tutors' age, gender, design-

relevant likes and dislikes, childhood, and educational background in two questionnaires. This was followed by a strict participant-as-observer research position for an eight-week period, in which RSA design briefs were documented through the student's eyes. The students were made aware that the researcher was studying the design process, but did not know any of the specific objectives as written in this paper. The researcher listened and watched, and documented a minimum of 8 hours per week of information on videotape and through photography. This information is a documentation of group work and individual work. Informal interviews took place at least once per week in order to document the individual narratives. The interview questions were determined from information revealed by the setting and the participants. These questions were carefully constructed in a non-leading manner, but were intended to 'dig deeper' into finding connections between "cultural capital" and the products being designed. Early questions are, *summarise where you are going and where you have been in relation to your design brief.* More detailed questions are: *you've described your progress and shown me your work, do you have any idea where your ideas are coming from?* By documenting the 'scripting' process through video tape and photography, information can be gathered that may ordinarily be lost during the research process. It is necessary to have a highly organised information storage system when using a variety of collection mechanisms. The questionnaire responses are recorded into spreadsheets, the photographs are ordered linearly according to times and dates as well as according to individual progress, and the videotape is ordered according to times and dates as well as constructed as individual narratives. Through organising the verbal, textual and visual information systematically, and through preliminary analysis, many examples of "cultural capital" have been indicated through personal experience.

## 5.1 Results

The participants involved in this study were naturally very inquisitive about the nature of the research project and the researcher. It was generally known that the researcher is an active product designer and a design educator. It was made clear that involvement in this project would not affect the students' grades or learning process, and that participation was voluntary. The researcher-subject relationship is significant in detailing, because the involved participants disclosed personal details about their design education experiences and their lives.

Common responses relating to design culture and explicitly taught information were surprisingly few. Only three students made a total of five spontaneous references to design culture during the entire 8 week period. These were to Le Corbusier, Arne Jacobson, Dyson, Banksy, and H.R. Giger. The majority of responses relating to explicitly taught material (*i.e.* that the tutor told students to look at) was in the category of books. The list of books mentioned by students and ones photographed are extensive including over one hundred different titles. The majority of these books were design related and included *The Dream Factory - Alberto Alessi, Hertzian Tales – Anthony Dunne,* and *Ideo Masters of Innovation – Jeremy Myerson.* A handful of books related to topics of interest specific to individuals. Examples of these are, *Hard Copy* (a soft porn novel), *Little More – Nobody Knows Yoshitomo Nara Drawings* (Japanese animation), and *A Brutal Friendship – The West and the Arab Elite* (issues relating to Israel and Palestine) (Figure 3).

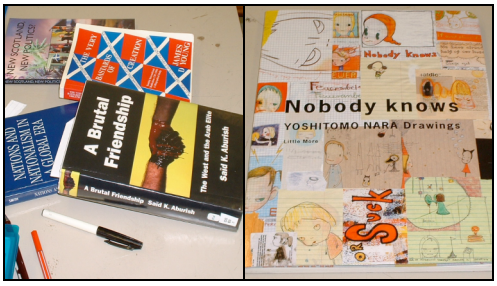



Figure 3. Israel and Palestine book, Japanese Animation book

Magazines, movies and music are other categories that were most referenced. Back issue magazines and current publications 'floated' around the classroom throughout the 8 week study and were rarely connected any one individual. Examples of these magazines are, *ID, Adbusters, The Face, Design Week, Domus, Metropolis* and *Blueprint*. There were only two instances where students verbally referred to magazines. In these cases, specific articles were referenced as being sources of information towards designing their product. In the category of movie, most instances were casual conversations about recent movies they had seen, however, there were three instances were movies were referenced as sources. For example, *Tron* was used to provide a 'futuristic' look for a final product, *Barbarella* was discussed in reference to Le Corbusier and Charlotte Perriand's chaise lounge, and *Alien & Species* were discussed because of Giger's artistic involvement. Finally, music was played as often as possible during studio time. Again, examples in this category were far ranging and generally unconnected to design, however, on one occaision the design of a CD cover was referenced as a source for the layout of a product presentation board and associated graphic imagery (Figure 4).




Figure 4. Graphics from a CD cover

More personalized information is the most common references made during the 'scripting' of products. These references are made for a number of reasons. For example, personal experience is used in the design studio to compare and contrast different visual ideas. During the definition phase of a project brief involving an exhibit design one participant said to another: *Shopping is like going to a museum isn't it? There's no difference. It's like the design museum and the shop are almost identical.* This analogy provides a parallel between the consumption of material goods and artefacts in museums. This stretches the idea of what exhibit design might be, and provides information about how audiences may perceive certain environments. For this same design brief, participants talk about their experiences in museums and galleries, which directly relates to the definition of their projects. One participant said that she *wanted to teach about broad global issues and expand the audience's identities.* Another participant wanted *to wreak vengeance on museums.* These fragments of information provide information about the individual students "cultural capital". That is, the first student clearly enjoys visiting museums and has been educated to enjoy them. The latter student is not comfortable in the museum setting, perhaps due to lack of exposure. The statements these students made about museums affect the 'scripting' of products, and will be

embedded in these products. The implications of this concept is enormous. Not only can it affect the grades the students receive, it could also affect the success of the individual students and the success of the product.

# 6. Conclusion

By engaging with the experiences of individual participants involved in the designing of products, there is recognition that objects, technologies, texts, and images in design are interwoven with individual identities. Discovering iconic inspirational sources in undergraduate product design students is a process that requires a multi-dimensional research gathering approach. There is "no clear window into the inner life of an individual" (Denzin and Lincoln 1998) or into the depth of thought and information that goes into the designing of products. Design is complex, deep and consequential, and involves the consideration of multiple factors. The multi-method approach and the three collection devices provide vibrant, suggestive, engaging and passionate student narratives that reveal a range of information about the subjects, objects and context of design creation. The 'scripting' of products uses postmodern approaches, and the examination of "cultural capital" indicated through personal experiences, are the beginnings to an ongoing investigation that will continue to shed light on the education, socialisation and professionalisation of the designer.

The implications for this kind of exploration and research will inform design curriculum development and the culture and sociology of designers in the future. For instance, implicit knowledge (*i.e.* as a result of mass media's influence and individual-personal experiences) needs to be recognized as an important source of inspiration. By recognizing that design education occurs both within and outwith the design studio environment, formal education can better support information that is personally- and socially-based. Educational settings need to support this through providing a breadth of experiences in theory, history and practice. In addition, design students need to be challenged to generate their knowledge base through creative, abstract design research. Finally, design education requires a liberal University setting where students with a variety of backgrounds can share their expertise and experiences. Louridas (1993) describes the designer as using an inventory of semi-defined elements such as experience, knowledge and skills to create products. It is the synthesis of explicit and implicit; and educational and social contexts that orchestrate the diverse activities of industrial designers to create products of value.

# References

[1] ALVESSON, S. and SKÖLDBERG, K., *Reflexive Methodology–New Vistas for Qualitative Research,* London: Sage Publications, 2000.

[2] BECK, U., *What is Globalization?*, Cambridge: Polity Press, 2000.

[3] BOURDIEU, P., *Distinction–A Social Critique of the Judgement of Taste,* London: Routledge, 1984.

[4] BRYMAN, A., *Social Research Methods,* Oxford, New York: Oxford University Press, 2001.

[5] CROSS, N., *Engineering Design Methods – Strategies for Product Design 3rd Edition,* UK: John Wiley and Sons Ltd., 2001.

[6] DENZIN, N. and LINCOLN, Y. S., *Collecting and Interpreting Qualitative Materials,* California: Sage Publications, 1998.

[7] ECKERT, C., "Sources of Inspiration: A Language of Design." *Design Studies*. (21) pp 523-538, 2000.

[8] ECKERT, C. and STACEY, M., "Designing in the Context of Fashion-Designing the Fashion Context" in Lloyd, Peter and Christiaans, Henri eds. *Designing in Context.* Delft University of Technology. Proceeding of Design Thinking Research Symposium 5, pp 18-20 December, 2001.

[9] GEERTZ, C., *The Interpretation of Cultures,* New York: Basic Books, 1973.

[10] GOLDSCHMIDT, G., "On Visual Design Thinking: the Vis Kids of Architecture." *Design Studies*. Volume 15. Number 2, pp 158-174, April 1994.

[11] HELLER, S. and PETTIT, E., eds. *Design Dialogues*. New York: Allworth Press, 1998.

[12] JULIER, G., *The Culture of Design,* London: Sage Publications, 2000.

[13] RODGERS, P.A. and MILTON, A.I., "What inspires Undergraduate Design Students?" *The Design Journal*. Volume 4. Number 2, pp 50-55 2001.

[14] LECLERCQ, P. and HEYLIGHEN, A., "5,8 Analogies Per Hour" *Proceedings of the Seventh International Conference on Artificial Intelligence in Design (AID 02).* England: Cambridge, 2002.

[15] LIEP, J., *Locating Cultural Creativity*. London: Pluto Press, 2001.

[16] LOURIDAS, P., "Design as Bricolage: Anthropology Meets Design Thinking." *Design Studies*. Volume 20. Number 6, pp 517-535, November 1999.

[17] OXMAN, R., "Prior Knowledge in design: a dynamic knowledge-based model of design and creativity." *The Design Journal*. Volume 1. Number 3, pp 16-29, 1999.

[18] OXMAN, R., "Precedents in Design: a Computational Model for the Organization of Precedent Knowledge." *Design Studies*. Volume 15. Number 2, pp 141-157, April 1994.

[19] SHAKESPEARE, P., ATKINSON, D. and FRENCH, S., eds., *Reflecting on Research Practice–Issues in Health and Social Welfare,* Buckingham: Open University Press, 1993.

[20] STONES, R., ed., *Key Sociological Thinkers,* London: MacMillan Press Ltd., 1998.

[21] STRICKFADEN, M. and RODGERS, P. A., "A Comparative Study of Iconic Influences Amongst British and Canadian Design Students", *Common Ground Design Research Society International Conference 2002*, UK: Staffordshire University Press, 2002.

[22] VIHMA, S., "Ways of Interpreting Design." in Standman, Pia, ed. *No Guru, No Method?* Helsinki. Discussion on Art and Design Research. University of Art and Design, pp 7-13, 1998.

[23] WOODHAM, J. M., *Twentieth-century Design*, Oxford and New York: Oxford University Press, 1997.

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