SOCIO-CULTURAL DIMENSIONS TO SHARPEN DESIGNER'S CULTURAL EYEGLASSES

Annemiek VAN BOEIJEN
Delft University of Technology, The Netherlands

ABSTRACT
This paper answers the question, how the dimensions that have been developed by anthropologists to typify cultures, can support designers in user-centred design processes. An analysis and evaluation of the use of cultural dimensions in design projects was performed. Although many of the dimensions found in the literature appear relevant for designers, the theories 'as is' often lead designers astray. On the basis of this, a set of socio-cultural dimensions was compiled: hierarchy, identification, time, aim, gender, space, attitude, expression, truth and 'the ones we do not know yet'. This set is proposed as a means to help designers to generate culture specific research questions, tune design methods to the local cultural context and to generate ideas for vision and concept development.

Keywords: Socio-cultural dimensions, cultural dimensions, design education, design process

1 INTRODUCTION

In a user-centered design project designers ideally move with their attention and reasoning about intended users between things that are unique for individual intended users of their designs (the personal), the things they share as members of a social and cultural groups (the group) and that we share all as human beings (the universal) (see figure 1).
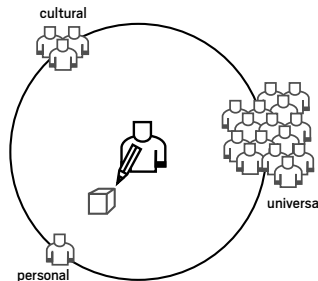

Figure 1. Designers coping with personal, cultural and universal aspects in design

Designers are trained to pay attention to a rich variety of aspects that they may want or need to take into account in their designs. They are educated to take different perspectives to understand their intended users and the context they are living in. For example, they study discomfort of their intended users, which gives opportunities for improvement from an ergonomical point of view. From design education we know that design students easily follow the aim to alleviate discomfort of people, focusing on single user-product relationships and following universal principles about human characteristics and behaviour. And although there is a growing interest in design research for social behaviour and design [1], [2], [3], design students have difficulties to look at their intended user as part of unknown cultural groups, understanding user-group-product relationships. In these user-group-product relationships we can look at products as mediators of social, and in particular cultural, processes. Products communicate and also influence specific values that are shared by the members of a group. For example, a round table protects informality, a low hierarchy, while a rectangular table gives the possibility to support hierarchy. Cultural processes are very complex, because cultural groups are not fixed; they change over time, new groups are formed and people belong to various

groups. du Gay et al. [4] describes this complexity of the 'production' of culture, influenced by both the design and consumers. The difficulty of understanding culture and the mediating role of products, or 'the meaning of things', has led us to the question how to equip designers to understand culture in a way that they can effectively apply in design processes. What do designers need to understand about culture in a design project, for what distinct reasons and how can they study the culture of their intended users? And, in the pressures of design practice, where designers need their attention for many aspects of a problem besides user needs or cultural factors: how little can they get away with and do justice to cultural situations? These questions are part of a broader study. Motivation for this study is the author's experience of two decades in international design projects, especially in the context of Base of the Pyramid projects [5]. This paper presents a part of the study, focusing on theories from anthropologists who developed dimensions to typify cultures [6], [7], [8]. We wanted to know how these theories could help designers to sharpen their cultural eyeglasses.

2   RESEARCH QUESTIONS AND METHOD

The central question of the study for in this paper is: How can the dimensions, developed by anthropologists to typify cultures, support designers in the design process? The sub-questions answered in this paper are: a. What models are available to typify cultures? (from anthropological studies), b. How do and can designers use these models? (barriers and opportunities from design education and design projects) and c. How can we translate our findings into a meaningful way to support designers? (from design education)

The topic has been analysed through 2 different lenses of the researcher:

1. As an outsider: Literature in anthropology was studied to frame the concept of culture and to understand the dimensions to typify cultural groups. In the literature we were looking for generic dimensions of how cultures differ. The models were analyzed and compared qualitatively.
2. As an insider, in a design context: A series of experiments and case studies were conducted in an educational setting. We studied how design students used cultural dimensions in international design projects. Reports and interviews were analysed and evaluated. We also tested in small design exercises the application of dimensions after they were explained in a language that fits design students. Findings from 1 and 2 were combined and this resulted in an adjusted set of dimensions.

3   CULTURE AND CULTURAL DIMENSIONS

In this project, we started from Hofstede's [9] definition of culture: culture is the system of shared beliefs, values, customs, behaviours, and artefacts that the members of a society use to cope with their world and with one another, and that are transmitted from generation to generation through learning. Also, we agree with the starting point of Hofstede that people share different mental programmes in different groups where they (want to) belong to (e.g. grouped by nation, region, sex, generation, social class and profession) (see figure 2) and that cultures can change over time. The layers of his onion model (symbols, rituals and heroes as practices of culture and values as the core) and the cultural dimensions are used for the characterization of cultures (see figure 3).
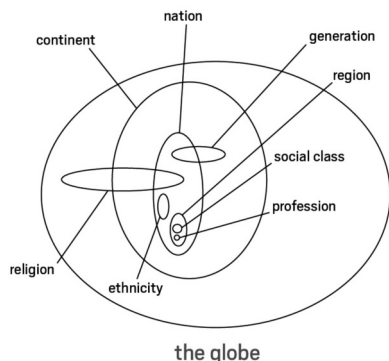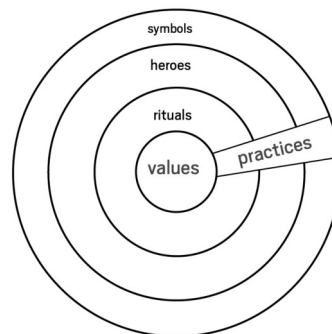
Figure 2. People belong to different cultural groups

Figure 3. The onion model (Hofstede, 2005)

3.1 Hofstede

In the '70s Hofstede started with the development of a method to measure, describe, and compare cultural groups. The comparison of cultural groups is based on the relationship between members of a group and their shared values. He started his measurements in the context of international companies (organizations); 40 national subsidiaries of the IBM Corporation, using a questionnaire developed in the company, identified 4 dimensions of national culture. The 5th and 6th dimension are based on the work of Michael Minkov [10]. Each dimension measured is described extensively with the onion model. However, products that illustrate the practices (of preferred values by a specific nation) are rarely used. In addition a CultureGPS tool [11] has been developed to navigate through intercultural differences. It enables to analyse visible behaviour differences in intercultural encounters and to predict to a certain degree, which interactions evolve when people from different nationalities meet. It is possible to compare 98 countries and 3 regions with each other or with one's personal profile. It aims to analyse, understand and handle cultural differences in a business context.

Table 1. Comparison of the cultural dimensions

Hofstede nations, regions, partly business context	House et al. nations, regions, managers of organizations and societies	Trompenaars et al. nations, regions, business-management context
1. Power Distance	1. Power Distance	Part of other dimensions, Achievement versus Ascription.
2. Individualism versus Collectivism	2. Collectivism 1: Institutional Collectivism	1. Individualism versus communitarianism
	3. Collectivism 2: In-Group Collectivism	
3. Masculinity versus Femininity	4. Gender Egalitarism	Part of Achievement versus Ascription
	5. Performance Orientation 6. Humane Orientation	2. Achievement versus Ascription.
Related to Uncertainty Avoidance and Indulgence versus Restraint	7. Assertiveness	3. Neutral versus Emotional
4. Uncertainty Avoidance	8. Uncertainty Avoidance	4. Universalism versus Particularism
5. Long Term Orientation	9. Future Orientation	5. Attitudes to time
6. Indulgence versus Restraint	Related to Assertiveness	Related to Neutral versus Emotional
No similar dimension	No similar dimension	6. Specific versus Diffuse
No similar dimension	No similar dimension	7. Attitudes to the environment

3.2 House et al.

The first 6 cultural dimensions defined by the GLOBE project [12], have their origins in the dimensions identified by Hofstede. Some dimensions are adjusted and new dimensions are added. The results are based on a broad and in depth study (started in 1993 with 62 cultures, representing major regions in the world). The results of the scores are based on managerial reports of both practices and values in the context of organizations and societies. In a Journal paper Hofstede criticized the methods and analyses of the study. For example, he questions the selection of interviewees: *'Measuring leadership from survey answers by leaders is, in my eyes, a debatable approach. If you want to find out about the quality of a product, do you ask the producer or the consumers?'* [13]. House et al. does not illustrate values specifically related to products.

3.3 Trompenaars and Hampden Turner

Trompenaars distinguishes 7 dimensions. Five value orientations are related to 'relationships with people', based on Parsons [14], one relates to the 'attitudes towards time' and one to the 'attitude towards environment', according to the basic problems human kind encounters defined by Kluckhohn and Strodtbeck [15]. The dimensions, statistically independent and without country scores, are preliminary developed to support managers to cope with cultural differences. Also Trompenaars refers to Hofstede's work and emphasizes the complexity of culture, focusing on the relationships between people, not between people and products. He also warns his readers for stereotyping. The pitfalls he mentions are: the limited view of the average behaviour in a specific situation, to judge a difference as 'something wrong' and individuals from the same culture do not necessarily behave according to the values represented by that culture. He also states that the two extremes, represented in a dimension, can be found in one and the same person. The extremes actually need to work together to enhance effective cooperation between people. In line with his reasoning he presents the extremes of a

dimension in a circle, the virtuous circle [7, p.43-44]. Trompenaars illustrates the values with examples of practices, sometimes related to products.

3.4 So what?

Although the models provide clear suggestions of what one can expect, a number of pitfalls have been identified. Hofstede himself already warns against applying general scores on individuals. In the CultureGPS tool's disclaimer some pitfalls are listed too: The statements about culture do not describe 'reality', but they are all general and relative. There are considerable differences between individuals. It emphasizes that cultural systems of nations are very complex and therefore, the information can be used as a guideline and awareness creation only.[11] The models show some similarities but it is difficult to understand the degree of completeness. Nevertheless, the dimensions describe on a generic level how one group of people may differ when coping with each other. The question is how designers can benefit from these insights.

4 CULTURAL DIMENSIONS IN DESIGN PRACTICE

Yet designers (just as other users of the theory) are prone to make the mistakes mentioned above, also, because most of them have not the motivation, time and knowledge to study the theory thoroughly. For example, in a design project about diabetes in India a Turkish designer was surprised that in the company he worked for, the power distance was much lower than outside the company and even lower than he experienced in Dutch companies, while India scores high on this dimension.

4.1 Barriers for designers to use the dimensions

From the evaluation of projects and experiments in education 4 barriers for designers to use the dimensions are identified.

1. *The **scores** are not applied in a correct way.*
a. *The scores are used without critic, leading to stereotyping and limiting the designers' view*
   The scores may give the designer a feeling of false security. Designing is complex since the designer is in a process of change. A target group scoring high on 'individualism', does not mean that the intended product should be suitable, for example, for individual use. Due to the individualistic culture it could be a big challenging to design something that mediates collective use. The model, used as a quick-scan, evokes a quick answering attitude of the designer, leading to a narrow view and missing the complexity of the process of meaning and change.
b. *The scores are valid for averages of large groups, measured on a national level, and not applicable for specific groups within nations.*
   Designers do not always design for specific nations, but for specific groups within nations and often covering different nations. Therefore, the scores do not automatically apply for the specific groups designers are designing for. For example in a design project about female hygiene in South Africa the students reported a high score of on the dimension Individualism that did not apply for their intended users living in townships.
c. *Differences in scores between cultures do not necessarily need to lead to different products.*
   The scores cannot explain all practices. Therefore, a one-way interpretation is not valid. That does not mean that the scores are completely useless, they can give an indication about the importance of specific values but they cannot be used as a fixed truth.
2. *The **definitions** and **names** are not fully understood and sometimes even misleading*
a. Hofstede and House et al. do not communicate that both extreme values of a dimension exist in a culture, but that one is valued as more important than the other; for example the word 'gender egalitarism' of House et. al. emphasizes one extreme of the dimension only.
b. Some names seem to refer to one aspect of the relationship while the word stance for more than that. For example, the dimension 'masculinity versus femininity' of Hofstede does not refer to the separation of roles according to gender only, but also to a preference in society for 'achievement' or the opposite value 'care'.
c. The names do not all fit in the pragmatic reality of designers. Some are too abstract for designers to imagine possible manifestations into products of the dimensions, such as 'communitarianism' of Trompenaars.

All names are developed in an academic context, not adapted to the pragmatic attitude of practicing designers. Besides, design students do not always study the exact meaning of the dimension.

3.   *Some dimensions are **difficult to explain** with products.*
Long-term orientation could be explained with products that are designed for a better future, for example, designed for sustainability, but we are not sure if that illustrates the meaning of the dimension properly.

4.   *The dimensions are thoroughly explained and underpinned but **described in text only**.*
Especially Hofstede uses many examples to illustrate how the scores of dimensions are manifested in society; in education, work, religion, shopping. However, they all do not use any visuals. A picture of the world on the cover is the only visual House (2005) uses. For designers visualizations are essential to read and remember. And also terms such as 'creativity', 'ambiguity' and 'empathy' are lacking, but could help to anchor the new theories in the designer's mind.

4.2 Opportunities for designers to use such cultural dimensions

Despite barriers there are appropriate motivations to use such cultural dimensions (from cases):

1.   *The dimensions help to generate relevant **questions** in the 'discover' phase [16] of the design process and helps to **structure** and communicate the findings.*

2.   *The onion model and dimensions can be used: (1) for sensitizing purpose, to understand the context of intended users; (2) to tune contextual research techniques [17] and (3) to generate ideas for vision development and conceptualization.*

In international design projects we saw students comparing the scores of the dimensions of their own nation with the scores of the nation of their intended users. For a sensitizing session it can be useful to generate questions such as 'will gender play a role in my creative sessions, for example, do we need to select women only?' At the same time individual differences, or differences based on other levels than nation, such as profession influence and should not be overlooked.

5   TOWARDS SOCIO-CULTURAL DIMENSIONS FOR DESIGNERS

The barriers (cases and experiments) resulted in criteria for the design of a new set of dimensions.

5.1 Criteria

The criteria for the selection and names of the dimensions relate to the content and to the form.

1.   It should be possible to illustrate the parameter with physical products easily, since that is most close to the designer's tasks (content).

2.   The name of the dimensions should express both the topic and the extremes to communicate (1) the topic that might be cultural specific and (2) the possibility for the designer to move between these extremes (form).

3.   The set of dimensions should cover the theories found and leave room for other possibilities since we do not know to what extend the set can be complete (content).

This set of criteria, together with a vision on how designers could cope with culture, resulted in 9 socio-cultural dimensions to be used by designers to ask cultural specific questions in the 'product planning phase' [18] or 'discover and define phase' [16] of a design process (see figure 4).
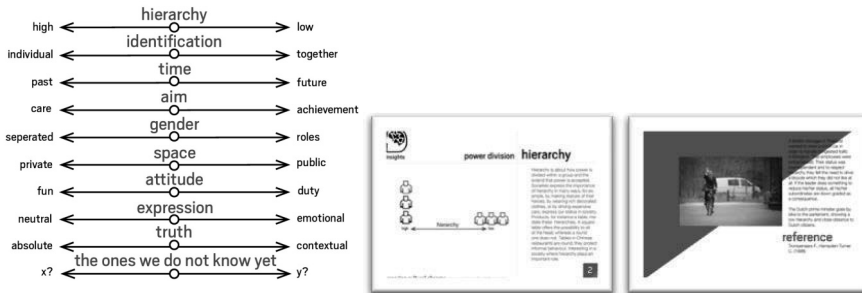

Figure 4. Socio-cultural dimensions & a card from the Crossing Cultural Chasms card set

5.2 Card set

The socio-cultural dimensions are explained in a card set, designed by the author to support designers to design 'culture sensitive'. The set is divided into 3 categories: *eye-openers* explaining reasons to design 'culture sensitive', *insights* offering understanding about the concept of culture (and related to the design practice) and *activities* providing designers possibilities to do a cultural study. The backside of each card illustrates the content of the front side with an example. The cards can be used in various ways, for example the design teacher can ask a design student to select the top 3 of each category in order to understand the main focus of the designer and consequently support the process. The use of the card set will be studied and tested this year.

6   CONCLUSIONS AND DISCUSSION

This paper answers the question how dimensions, developed by anthropologists to typify cultures, can support designers in the design process. A strong aspect of the dimensions is the way they describe cultures on a generic level and not judging differences. It is for the designer to translate the general into the specific. This strength is at the same time a weakness; a good understanding is needed of the dimensions, but designers do not have the time, interest and competences and the scores are not always appropriate for the design project, misleading and/or false interpreted. Therefore, we propose another set for designers. Training of the designers will be still needed: *'We cannot tell them to put the spoon in the soup only, we need to teach them how to stir too!'* In next study a procedure for using the socio-cultural dimensions as part of the card set will be designed and tested.

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