Product design: the reflection of designers' preferences

Author/Contributor:
Razzaghi, Mohammad; Ramirez, Mariano Jr

Event details:
Art and Industry Forum of the Iranian Academy of the Arts
Tehran, Iran

Publication Date:
2005

DOI:
https://doi.org/10.26190/unsworks/455

Product Design: The Reflection of Designers' Preferences

Mohammad Razzaghi and Mariano Ramirez Jr

Faculty of the Built Environment
University of New South Wales
Sydney, Australia

A paper presented to the Art and Industry Forum of the Iranian Academy of the Arts, Tehran, Iran, 12 Jan 2005.

Products can be considered as the reflection of designers' desire and preferences. However this desire may vary across borders. For instance, the attitudes of an Iranian industrial designer towards a design project brief may greatly differ from that of an Australian industrial designer. This in-depth PhD investigation focuses on developing a framework by which the marked cultural differences among Iranian and Australian industrial designers' approaches toward the early stages of design process [concept generation] can be explained. The framework is devised to examine the influence of the industrial designers' own culture on their works of design which, in our belief, is a prerequisite to later understanding the relationships between cultures, designers, users and products. An extensive literature search has revealed that in general the non-physical qualities of products (such as pleasurability, experience and emotion in design, sense of connectedness with product, and soul of product and culture) are usually overlooked or totally ignored in favor of the physical aspects of designing a product like usability, ergonomics and functionality. The authors of this paper deem that culture is one of the most important aspects of our everyday lives and argue that the designers' own cultural values play a primary role in influencing the design of the product. As far as can be determined, the examination of the impact of the designer's own cultural dimensions of values over different aspects of product design has not yet been widely investigated in industrial design research. This paper also submits that the integration of culture is beneficial to product users.

Introduction

The outcomes of product development processes are influenced by the interplay of several variables: designers, manufacturers, product users, marketers, contexts of use, engineers, and so on. In other words, a product design is a function of those variables. It has been well evidenced that culture and cultural values play influential roles over almost all aspects of human life (Hofstede, 2001), and it is assumed that the realm of industrial design is not exempt from these pervading cultural effects.

As far as can be determined, the relationship between the designers' own culture and the design he or she creates has not yet been investigated within the industrial design research field. On the other hand, the necessity of integrating the culture of users into the design of products has already been widely propounded by a number of researchers, authors and designers (Holt, 1989, Banathy, 1992, Williams, 1993, Ask, 1997, Vanka, 1997, De Souza, 1999, De Souza et al., 1999, Plocher and Honold, 2000, Berg-Weitzel and Laar, 2001, Gagliardi, 2001, Powell, 2001, Rose and Zuhlke, 2001, Ellsworth et al., 2002, Kemnitzer and Grillo, 2002, Salimi, 2002, Yaveroglu and Donthu, 2002, Zec, 2002, Bell et al., 2003, Hidaka, 2003). This extensive literature supports the notion that cultural integration plays a significant role in the effective design of products.

Although there are a few studies alluding to the impact of culture over certain products as well as some, which look at the influence of peoples'

culture on products specific to a place or nation, this research aims to investigate the influence of the industrial designer's own preferences, which are developed by his/her own culture and cultural values. The subject pool of this study will be chosen among industrial design practitioners from Australia and Iran; representing two non-identical cultures. How do the designers' own cultural values influence the way they design? Are there marked differences in the way that designers from various cultures approach a product design brief? If so, are there patterns in these differences?

The process of concept generation in product development is, for the most part, initiated by an industrial designer originating diverse ideas for a new product. During this stage, images and ideas, which are considered to approximate the designer's mentality or impressions, are engendered (Lloyd and Snelders, 2001)

The authors are interested in examining the possible differences in the outcomes of conceptualization stages in a typical product design cycle across nominated cultures. Doing so would enable us to observe whether designers incorporate their own conscious, subconscious and unconscious minds – as formed by their own cultures – in the development of their concepts. This paper will narrow its focus to the importance of addressing the designers' cultures in product conceptualization.

Many non-physical aspects of designing a product are ignored or overlooked in most product development processes. These often-disregarded non-physical characteristics include, among others, the pleasurability of objects, the experience and emotion in design, the sense of connectedness with product, and the soul of product and culture. Designers and engineers, obsessed with the physical and functional constraints of products, often consider the superiority of goodness-of-fit to the bodily needs of users over and above their non-physical desires.

Even so, industrial designers the world over are being challenged and encouraged by the International Council of Societies of Industrial Design to foster cultural diversity in the face of world globalization (ICSID, 2002). Thus, industrial designers are exhorted to implement the cultural wants, preferences and attributes of people into the products that they create, in order to make them culturally suitable and pleasurable to use for all potential users. Samuels (2002) also suggested the necessity of redefining industrial design in order to subsume 'culture' in the definition of industrial design as a goal for optimizing the lives of individual users.

In general, industrial designers are not educated to understand and overcome their own culture in favor of incorporating the cultural requirements of the potential user's group. Consequently users, coming from a culture different from that of the designers, can hardly expect to purchase a product fully matched to their cultural needs and wants, and often they have to somehow adjust their needs to the products that are available to them.

Products can be regarded as the amalgamation, association and manifestation of a set of physical and nonphysical codes, by which designers can communicate items of their own desires and that of their users. Obviously, these codes should be in common so as to enable communication.

Causes

Various literature in industrial design and cultural theory point to the existence of at least five main causes for the negligence of culture in the product design process:

- The additional costs that may be involved in the research and development of products that are culturally oriented or customized for a specific user group or region (Trompenaars and Hampden-Turner, 1997)
- The lack of industrial designers' know-how in cultural integration, stemming from a gap in their education (Reese, 2002)
- The globalization of products and services (ICSID, 2002)
- Technology-focused designers and engineers, as well as market-oriented manufacturers, who prefer to innovate on technological grounds rather than addressing cultural fitness (Holt, 1989)

- The customization of products being viewed as contrary to the nature of mass-manufactured industrial production (De Souza, 1999).

Globalization

Cultural neglect in the product design process is considered so as to be one of the consequences of globalization (McBurnie and Clutterbuck, 1987, Bond, 1991, Nickles, 2002).

Globalization, accentuated from 1947 when the General Agreement on Tariffs and Trade [GATT] was signed, is the main opposing force facing the localization [and assumedly, cultural fitness] of products. Zec (2002) observed that globalization aims to provide greater similarity of perception and lifestyle as well as greater uniformity of product culture. This phenomenon has tended to make everything alike and converged into one single taste, whereas diversity is a natural want of human beings. Globalization advocates – for instance Levitt (1983) who believed that a single worldwide market is the only way to go – have intended to homogenize and converge consumers' needs and tastes in order to create an infrastructure for unified marketing and for the selling of standardized products (De Mooij, 1998). By doing so, the diversity of culture can be obliterated in favor of uniform products.

Plocher and Honold (2000) presented the advantages of globally-distributed products: lower cost of mass production and easier design process, among others. They also outlined that the homogeneity of global culture, the similarity in everyone's way of thinking, and the costliness of designing the nuances of foreign cultures into products as being the main causes for the spread and preponderance of globally-oriented mass-produced goods.

ICSID (2002) views globalization as a 'must-be-opposed' reality of our current era and states that supporting cultural diversity in spite of the globalization or internationalization of the world is a task for design practitioners the world over to be taken up. Localization of products can act as a counter-balancing force for the maintenance and durability of national cultures facing globalization as well as its potential capacity for holding, preserving and presenting cultural values to the respective product users.

Globalization has, to a certain extent, already been able to homogenize the outer layers of users' cultures. While Kemnitzer and Grillo (2002) acknowledged some benefits of globalization, they believed that it has brought on problems which have already started to show their negative effects. Trompenaars and Hampden-Turner (1997) also believed that standardized industrial products – undifferentiated, homogenized, mass-produced products that have resulted from globalization – are disfigured from the onset by an unending downward cost-price spiral. The imposition of products under the light of globalization can also be considered as a source of environmental and cultural degradation (De Souza et al., 1999). De Mooij (2002) identified that the inner layers of people's core cultures, values and attitudes, are deeply maintained and will continue to remain over time despite the preponderance of globally-marketed products and globalization.

Largely, the dissatisfaction of consumers who use products to satisfy their various needs and wants, can be viewed as linked to the globalization concept. Bjorkman (2002a, 2002b) and Aula et al. (2003) adduced examples showing that the globalization process has started to compromise and soften its approach towards the standardization of products and services, and that the consideration of diverse users' spiritual necessities and particular wants, including cultural requirements, has become more significant. Aula et al. (2003) noticed the continuous fragmentation of a market which shows that the demand for individuality, user's needs and expectations is increasingly growing and becoming the important factors for creating successful products.

Recontextualized vocabularies have arisen in the literature versus globalization: terms such as localization, segmentation, privatization, colonization, and regionalism now all express the opposing forces to globalization and describe the tendency of humans to keep and promote their own cultures, territories and values within their societies.

Attempts

Several research efforts have been made to address and identify the relationship between culture and various aspects of design, such as the impact of culture on products and the impact of products over the culture, and how the integration of culture could be implemented in the product design process. Berg-Weitzel and Laar (2001) examined the relationship between culture and communication in packaging design; Ellsworth et al. (2002) investigated the effects of culture on refrigerator design. Siu (2003) carried a case study with Hong Kong public rubbish bins to find out how industrial designers should understand and more importantly respect the particular cultures of the community in which the users are living. Lloyd and Snelders (2001) studied Philippe Starck's Juicy Salif citrus squeezer, to draw a conclusion on the way he thinks of a design, and showed how a simple design could be profoundly rooted in the inner layers of a designer's personality and perception. They confirmed the importance of the designers' preferences in design and found that every product is influenced by two different designing processes; firstly by the designer's individual process of designing and secondly by broader contextual design factors in culture and society. These works suggest that, within the field of industrial design, the topic of culture and design has already been noticed although not at the same angle which we looked at in this study.

Many studies have also been undertaken in the fields of marketing, business, psychology, management, politics, and other social sciences, addressing the issue of culture and its varied influences over these disciplines. Following the same track of investigation as above, cultural impacts on design have also been examined in architecture, industrial design, interior design, packaging design, and interaction design.

The issue with culture and product design has also been the subject of some investigations from different angles like context of use, pleasurability, interculturality, sustainability, usability, user-centered design, spiritual aspects of products, or even ergonomics. However, as far as we could determine, no research has been undertaken to examine the effects of the industrial designers' preferences, rooted in their own cultural values, over the design aspects of products.

Impacts and Benefits

This paper will argue that non-culturally adapted products offer weaker interaction qualities with their potential users. Conversely, culturally oriented products create stronger bonds with users. If product users find products culturally closer and meaningful to them, the following results can be expected as a consequence:

1. Culture can sell. Fincham and Rhodes (1994) and Portigal (1997) insinuated that the integration of culture into products promotes success. Culture was also regarded as a new dimension of competitiveness (De Souza, 1999).

2. Culture can be a means for users' satisfaction. McGregor (2003) reported that most companies spent at least 85 to 95 percent of their design effort time on fitness to standard and fitness to use. While it is important for products to perform well, it must be recognized that the pleasurability of products cannot be achieved and satisfied merely through dealing with functionality. Industrial designers consciously or unconsciously integrate their own codes of design messages and these codes have to be decoded and appreciated by product users.

3. Culture can be a reflector of users' identity. Human beings intrinsically seek their identity in order to bring meaning to their lives. The fact that culture is doubtlessly a part of one's personality is most widely quoted. Lambourne et al. (1997) contended that in the current era, people are looking for their own identity more than in any previous historical age and doing this in their own cultural way. Accordingly, culturally adapted products can help people to locate something in common and in harmony with their own culture and lifestyle.

4. Culture can be a resource for design innovation and inspiration. Taking culture into account during design activities can pave the way to the diversification of ideas for user needs satisfaction, consequently leading to innovation. De Souza (1999) emphasized the

necessity of diversity to humankind based on cultural differences and maintains that culture can generate this required diversity. She regards culture as one of the fundamental issues in understanding polymorphism[1] in design.

5. Culture can play a role in the intuitive use of products. In a sense, human intuition relates to our conception of things, which has been already built up within our own cultural contexts. This can be demonstrated, for instance, by the opposite ways of turning a light on in different countries, which is by flipping the switch either upward or downward (Powell, 2001).

6. Culture can be a balancing force versus globalization. As mentioned earlier, this approach has been announced by ICSID as a 'must-be-opposed' reality of our industrial era. Plocher and Honold (2000) advise of a growing sensitivity among major manufacturers towards appreciating the importance of cultural incorporation by localizing their products and services. Powell (2001) highlights the importance of both globalization and cultural values to be acknowledged in an era of worldwide communication, economy and awareness.

7. Culture can set trends and fashions. Alexander (1979) recognized that users from different cultures are influenced by the design of products in different ways. Product aesthetics comprised of color, materials, and shapes may achieve desirability in one culture and still be unappealing to consumers in another. The attractiveness and unattractiveness of products across nations implies relativity in preferences and connotes that some cultural variables may be in charge. In this sense, designers may also be regarded as cultural gatekeepers.

For all the above reasons, the integration of culture into products can be viewed as being very advantageous and beneficial to the industrial design discipline and to product users from many angles. However it should be admitted that it is not a straightforward and sterilized task to be undertaken by industrial designers, but an exercise hard-to-manage as there exists a huge number of variables at different layers of this amalgamation, making it even more intricate. Recognizing and extracting values from cultures and later, the interpretation of those values into some meaningful aspects of product concepts requires extensive knowledge of the fields of industrial design, culture, sociology, anthropology, psychology, and others. Further to this, values are non-physical and most of them unconsciously influence the designer, and as a result, are intangible and potentially ambiguous to understand.

As previously stated, this paper is concerned with condensing the importance of the impact of the designers' culture on the design aspects of products as well as introducing a framework in order to investigate the issue. An appropriate framework has to be set up and narrowed down from various aspects and levels in order to address the question. Our approach incorporates cultural dimensions of values - as explained below - as a basis for developing an instrument in order to measure designers' preferences.

Cultural Dimensions

Collectively, there are hundreds or possibly thousands of values within each culture at the level of society (Schwartz, 1997) excluding universal, organizational and individual values. For this reason, a system - a reference scale - is required to enable examination of the multitudinous cultural values across cultures. This system is often referred as 'cultural dimensions'. Dimension is a characteristic of a culture that can be compared across cultures. This classification would organize values into a limited number of cultural dimensions and facilitate an instrument to compare dissimilar cultures.

Lytle et al. (1995) reported at least 6 different categories –models- of cultural dimensions subsuming of at least 38 different dimensions in total. This follows that dissimilar cultures could be compared in so many different categories.

One of the most influential cultural models is Hofstede's model. This model of cultural dimensions has stimulated an astonishing number of cross-cultural studies in various disciplines. In this paper and as an example of

[1] Polymorphism takes its analogy from biology and chemistry. In the context of this document, it means a single product which can attribute more than one or unlimited numbers of forms.

models of cultural dimensions, a review of his model is briefly addressed.

Hofstede (2001) argues that every person carries within himself or herself patterns of thinking, feeling, and potential acting, which were learned throughout their lifetime. He itemizes the main manifestations of cultures, as values, rituals, heroes and symbols, indicating that symbols express the most superficial while values comprise the deepest layer of culture.

Symbols could be words, gestures, pictures or objects that carry a specific meaning within a culture. Those who share the culture may be the only ones who can recognize the meaning of a particular symbol. Heroes are persons alive or dead, real or imaginary, who possess attributes, which are highly regarded within a culture, where they are seen as role models for behavior. Rituals are collective activities, which are socially required within a culture for achieving desired goals. Values are the core of culture and are broad tendencies to prefer certain states of affairs to others. Values are feelings with a plus and minus side, and deal with evil vs. good, dirty vs. clean, ugly vs. beautiful, etc. Values are among the first things children learn, not consciously, but implicitly.

Hofstede empirically identified four common dimensions of values for national cultures. His four cultural dimensions of values are as follows:

- Power Distance Index [PDI];
- Individualism versus Collectivism [IDV];
- Masculinity versus Femininity [MAS]; and
- Uncertainty Avoidance Index [UAI].

Power distance is the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally.

Individualism describes societies in which the ties between individuals are loose. Collectivism, in contrast, relates to societies in which people from birth onward are integrated into strong, cohesive in-groups, which throughout people's lifetime continue to protect them in exchange for unquestioning loyalty.

Masculinity values achievement, heroism, assertiveness and material success, whereas femininity values relationship, modesty, caring for the weak and interpersonal harmony. In masculine societies, the social aspect of gender role is clearly distinct, whereas in feminine societies the social aspect of gender role is indistinct. Both men and women are supposed to be modest, tender, and concerned with the quality of life.

Uncertainty avoidance is the extent to which the members of a culture feel threatened by uncertain or unknown situations.

Our research framework

Jordan (2002) discloses that the hierarchy of consumer requirements starts from the functionality of products and it passes through usability and then towards seeking pleasure in both aesthetical and functional aspects of products. Since the very concept of pleasurability is rooted in culture (Norman, 2002), pleasurability can mainly be achieved when users' cultural wants and attributes are seriously taken into account in the design process. Norman (2002) suggests four constraints as the sources of precise users' behavior: cultural, natural, physical and social. Röse (2002) explains product design as a message by which the designer is able to convey to the user the usability of the product in a self-explanatory way. However to achieve this goal, the cultural backgrounds of both designer and user should be considered as influencing variables.

All aspects of human life are profoundly influenced by culture (Schwartz, 1997, Zhan, 1999, Hofstede, 2001, Salimi, 2002, UNESCO, 2002, Yaveroglu and Donthu, 2002), and design activity, being an aspect of human life, therefore cannot be culture free. The hierarchy of influencing culture on the process of designing a product starts from designers through implementing their own preferences into products.

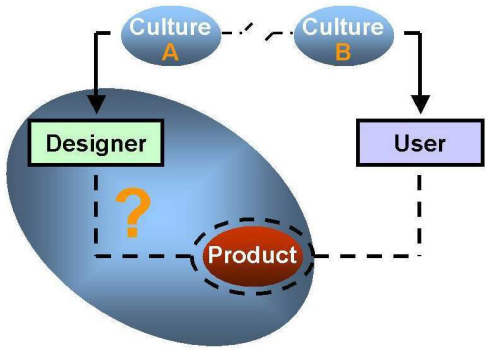

Figure 1: Area of investigation in this study

The target area of this research, as illustrated in Figure 1, is the designer-product relationship in terms of generating concepts for a given product. The drawing depicts a scenario where the designers' culture is different from the users' culture and there is no nexus [or perhaps a weak one] among their main cultural dimensions. Under these conditions of designer-user cultural dissimilarity, the way that designers' culture comes to play a role in generating a concept is deemed more significant to study than in a situation where both users' and designer's culture are similar or the same.

Cultural values form part of the causes of people's behavior, deeds and words. Hofstede (2001) asserted that no part of humans' lives can be exempt from the influence of culture. Press and Cooper (2003) point out that the works of designers are influenced by their own culture.

Our research basically hypothesizes that: "Designers' own cultural values influence their design values". By this we imply that, in general, designers from a certain culture would concentrate on a particular aspect of a product's design – on features that are deemed important by their own cultural values – whereas designers from a culture on the other end of a given cultural dimension spectrum would probably not focus on the same aspect while working on the same product, since their cultural values tend to be directed on some other aspects of design characteristics.

We argue that this investigation has to be, in the first place, carried out during the concept generation stage, which is in the initial phase of the product design process.

Concept generation [also known as concept design or design conceptualization] involves the origination of diverse ideas for a product and afterwards evaluating the available alternatives against the specifications. Ulrich and Eppinger (2000) articulated that the aim of conceptualization is to see all the possible product aspects that may relate to the customer needs and requirements. During this stage the first dribbles of the purest designer's idea starts forming and later emerging on paper. Further down the design process, more physical and manufacturing criteria are applied and this causes a reduction in the novelty of the designers' initial ideas. In other words, during the early phases of the design process designers are challenged and allowed to be most divergent, creative and innovative; during the middle and final phases, the design activity is more convergent, boxing and leading designers towards the physical constraints of manufacturing and marketing. This explains the choice of the design conceptualization stage as the phase for investigation for this study, rather than the design finalization stage.

As previously pointed out, cultural dimensions of values will be used as a medium for developing of an appropriate instrument, by which the examination of the designers' attitudes and preferences [design values] towards designing a product made achievable. Even though literature suggests quite a few categorizations of product and aspects of design, however none of them served our purpose alone, but collectively and selectively. Consequently, inspired by models of cultural dimensions of values, it was decided to hypothesize around the five main design aspects – relationships – of products in order to explore designers' potential design-related preferences. The considered aspects of product concepts are as follows:

- Functionality aspects
- Manufacturability aspects
- Usability aspects
- Creativity aspects
- Aesthetic and style aspects

One of the best and widely suggested approaches of finding the underlying constructs is triangulation, which involves the

simultaneous use of more than one approach and searching for convergence between the approaches. As a result, this research framework is triangulated so as to utilize both quantitative method [exploration of designer's word] and qualitative approaches [exploration of designer's deed] to answer the research inquiry.

For the quantitative part of the investigation, a survey will be disseminated via the Internet among designers from two cultures: Australia and Iran. The questionnaire will inquire into designers' attitudes towards the five design aspects of products. The collected survey data will be exposed to quantitative methods and statistical analysis. The outcome of the survey will lead the second stage of the study towards the point where the qualitative approach can be initiated.

For the qualitative stage of the study, the deeds and words of designers will be regarded as design actions and verbal expressions respectively. A preliminary plan for the qualitative approach is administering a series of design experiments wherein industrial design practitioners from the same cultures as in the quantitative study will be recruited. Designers will be given a simple design task to perform and will be asked to generate simple annotated sketches, generating a few concepts for a given design assignment. The experiment will then be followed with a short interview through open-ended questions asking for the designers' reasons of their own choices and preferences on the five design aspects of products. The content of the interviews will then be transcribed into text and subjected to the qualitative method of content analysis. The aim of this stage is to explain how designers incorporate their own cultural constructs to accommodate design briefs.

While the quantitative phase of this study inquires into designers' general attitudes towards the five product design aspects in order to extract their preferences in as broad spectrum as possible, the qualitative phase looks in depth at the ways designers interpret and integrate their own preferences into products. In other words the first stage is concerned with 'WHAT' questions whereas the second stage is about the 'HOW' questions.

Conclusion

In this paper the authors argued that the integration of culture is beneficial to both the industrial design discipline and to the users of products created by designers.

The importance and central role of designers in the design process and the impact of their own cultural preferences and values on the design aspects of products, particularly during the concept generation stage, were emphasized as significant to be addressed.

A triangulated framework, comprising of two complementary methodologies, was manipulated in order to approach the same hypothesis from two different angles. The qualitative and quantitative techniques facilitate both scientific and non-scientific [design] aspects of research strategy. The results of the proposed phases of the study will be presented as separate papers further along the way as the research progresses.

Acknowledgement

This study is ported by a grant from the Iranian Ministry of Science, Research and Technology.

We would like to thank Dr Florence Phua, Dr Kevin Dunn, Dr Prem Ramburuth, Dr Grant McCall and Prof Alexander Cuthbert for their constructive comments and suggestions.

References

- **Alexander, C.** (1979) '*The timeless way of building*', Oxford University Press,, New York,
- **Ask, T.** (1997). '*Toward a cultural oriented product design'*, from http://www.aho.no/ask/culture.htm
- **Aula, P., Pekkala, J. and Romppainen, J.** (2003). '*Modeling the Socio-Cultural Context'*, ACM, Retrieved 9/9/2003, 2003, from http://www.urova.fi/mode/dppi03.pdf
- **Banathy, B. H.** (1992) 'The Prime Imperative: Building a Design Culture', *Educational Technology,* Vol. 32, No. 6, pp.33-35

- **Bell, G., Blythe, M., Gaver, B., Sengers, P. and Wright, P.** (2003). '*Designing Culturally Situated Technologies for the home'*, Paper presented at the CHI 2003, Florida, USA, pp.1062-3
- **Berg-Weitzel, L. V. D. and Laar, G. V. D.** (2001) 'Relation between culture and communication in packaging design', *The Journal of Brand Management,* Vol. 8, No. 3, pp.171-184
- **Bjorkman, I.** (2002a) 'Aura: Aesthetic Business Creativity', *Consumption, Markets and Culture,* Vol. 5, No. 1, pp.69-78
- **Bjorkman, I.** (2002b). '*Beautiful Business; Creating the irresistible'*, Stockholm School of Entrepreneurship (SSES), 2003, from http://www.sses.com/public/events/euram/complete_tracks/management_play/bjorkman.pdf
- **Bond, M. H.** (1991) '*Beyond the Chinese face: insights from psychology*', Oxford University Press,, Hong Kong ; New York
- **De Mooij, M.** (1998) '*Global marketing and advertising: understanding cultural paradoxes*', Sage Publications,, Thousand Oaks, Calif.,
- **De Mooij, M.** (2002) 'Convergence and Divergence in Consumer Behavior: Implication for International Retailing', *Journal of Retailing,* Vol. 78, pp.61-69
- **De Souza, M.** (1999). '*Interculturality and design: Is culture a block or encouragement to innovation?'* 2003, from http://www.shu.ac.uk/schools/cs/ead/work/desouz.pdf
- **De Souza, M. F., Pereira, A. F. and Dejean, P.-H.** (1999). '*Interactions between Cultural degradation and Market Conquest: A problem for Ecodesign'*, Paper presented at the First International Symposium on Environmentally Conscious Design and Inverse Manufacturing,, Tokyo, Japan, pp.497-501
- **Ellsworth, K., Magleby, S. and Todd, R.** (2002). '*A Study of the Effects of Culture on Refrigerator Design: Towards Design For Culture'*, Paper presented at the DETC 2002, Montreal, Canada, pp.1-7
- **Fincham, R. and Rhodes, P. S.** (1994) '*The individual, work, and organization: behavioral studies for business and management*', (2nd ed.), Oxford University Press,, Oxford New York,
- **Gagliardi, M.** (2001) 'Alchemy of culture: From adaptation to transcendence in design and branding', *Design Management Journal,* Vol. 12, No. 4, pp.32-39
- **Hidaka, T.** (2003) 'A New Discourse On Slippers', *Skyward,* Vol. 1, No. 7, pp.22-23
- **Hofstede, G.** (2001) '*Culture's Consequences: Comparing values, behaviors, institutions, and organizations across nations*', (2nd ed.), Sage Publication, Thousand Oaks,
- **Holt, K.** (1989) 'Does the engineer forget the user?' *Design Studies,* Vol. 10, No. 3, pp.163-168
- **ICSID** (2002) '*Facts about ICSID*', International Council of Societies of Industrial Design,
- **Jordan, P. W.** (2002) '*The Personalities of Products*', **In** Green, W. S. and Jordan, P. W. (Eds.), Pleasure with products : beyond usability, Taylor & Francis,, London ; New York,
- **Kemnitzer, R. B. and Grillo, A. C.** (2002) 'Designing Culturally Enriched Products for International Markets', *Innovation,* Vol. Winter 2002, pp.50-53
- **Lambourne, R., Feiz, K. and Rigot, B.** (1997). '*Social Trends and Product Opportunities: Philips Vision of the Future Project'*, Paper presented at the CHI97 (Computer-Human Interaction) Human Factors in Computing Systems, Atlanta, Georgia, USA, pp. 494-501
- **Levitt, T.** (1983) 'The Globalization of Market', *Harvard Business Review,* Vol. May, No. 1983, pp. 92-102
- **Lloyd, P. and Snelders, D.** (2001). '*What was Philippe Starck thinking of?'* Paper presented at the Fifth Design Thinking Research Symposium, Delft University of Technology, The Netherlands,
- **Lytle, A. L., Brett, J. M., Barsness, Z. I., Tinsley, C. H. and Janssens, M.** (1995) 'A paradigm for confirmatory cross-cultural research in organizational behavior', *Research in Organizational Behavior,* Vol. 17, pp. 167-214
- **McBurnie, T. and Clutterbuck, D.** (1987) '*The Marketing edge : key to profit and growth*', Weidenfeld and Nicolson,, London, p.191
- **McGregor, S. A.** (2003) '*Managing Value with Design for Six Sigma*', **In** Creveling, C. M., Slutsky, J. and Antis, D. (Eds.), Design for Six Sigma : in technology and product development, Prentice Hall PTR,, Upper Saddle River, N.J.,
- **Nickles, S.** (2002) 'Preserving Women: Refrigerator design as social process in the

1930s', *Technology and Culture,* Vol. 43, No. 4, pp. 693-727

- **Norman, D. A.** (2002) '*The design of everyday things*', (1st Basic paperback ed. ed.), Basic Books,, [New York] :,
- **Plocher, T. and Honold, P.** (2000). '*Culturally-Adapted Product in the Global Market: Dealing with the Naysayers'*, Paper presented at the CHI 2000, Hague, Netherlands, pp.1-6
- **Portigal, S.** (1997) 'Design as a cultural activity', *ACM SIGCHI Bulletin,* Vol. 29, No. 3, pp. 12-14
- **Powell, E. N.** (2001) 'From the president', *Design Management Journal,* Vol. 12, No. 4, p.5
- **Press, M. and Cooper, R.** (2003) '*The design experience: the role of design and designers in the twenty-first century*', Ashgate,, Aldershot, England; Burlington, VT,
- **Reese, W.** (2002) '*Behavioral Scientists Enter Design: Seven Critical Histories*', **In** Creating breakthrough ideas: the collaboration of anthropologists and designers in the product development industry, Bergin & Garvey,, Westport, pp. 17-43
- **Röse, K.** (2002). '*Model of Culture and Their Applicability for Designing User Interfaces'*, Paper presented at the Conference WWDU 2002- World Wide Work, Berchtesgaden, pp. 319-321
- **Rose, K. and Zuhlke, D.** (2001). '*Culture-Oriented Design: developers' knowledge gaps in this area'*, Paper presented at the 8th IFAC Analysis, Design and evaluation of human-machine systems, Kassel, Germany, pp. 11-16
- **Salimi, A.** (2002). '*Design For Cultural Differences'*, Paper presented at the DETC 2002, Montreal, Canada,
- **Samuels, A.** (2002) 'Redefining industrial design', *Industrial Design: ID.,* Vol. 49, No. 4, pp. 6
- **Schwartz, S.** (1997) '*Values and Cultures*', **In** Munro, C. D. and Schumaker, J. (Eds.), Motivation and Culture, Routledge, New York, pp. 69-84
- **Siu, K. W. M.** (2003). '*Product Design and Culture: A case study of Hong Kong public rubbish bins'*, Paper presented at the 2003 Hawaii International Conference on Arts and Humanities, Honolulu, Hawaii,
- **Trompenaars, F. and Hampden-Turner, C.** (1997) '*Riding the waves of culture: understanding cultural diversity in business*', (2nd ed.), Nicholas Brealey, London,
- **Ulrich, K. T. and Eppinger, S. D.** (2000) '*Product design and development*', (2nd ed.), Irwin/McGraw-Hill,, Boston :,
- **UNESCO** (2002) '*Cultural Diversity; Common Heritage, Plural Identities*'. Paris: UN, p.111
- **Vanka, S.** (1997) 'Culture and color: Sacred green, Lucky pink', *THE FUTURIST,* Vol. July-August, pp. 16-17
- **Williams, G.** (1993) 'Mind the gap', *Design Magazine,* Vol. September, No. 537, pp. 18-21
- **Yaveroglu, I. S. and Donthu, N.** (2002) 'Cultural influences of the diffusion of new products', *Journal of International Consumer Marketing,* Vol. 14, No. 4, pp. 49-63
- **Zec, P.** (2002) 'Global Design & cultural Identity', *Innovation,* Vol. Summer 2002, pp. 34-38
- **Zhan, S. E.** (1999) 'Marketing across cultures', *World Trade,* Vol. 12, No. 2, pp. 80-81