An Exploration of Cultures Importance in User Experience Design

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On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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Introduction

What makes a good application? One might be quick to assume it's all about the main functions and inner workings of the source code. What about the presentation? The application's function is only as usable as the designers have made it. What's more, the application is only as appealing as the designer's have taken the time to make it. But how do designers know what will be seen as appealing and is that all one needs for a successful application? It all leads back to the users.

While user centric design has been around since the early 18th century, the name of the field itself was only coined in the mid-90's by one Donald Norman as "user experience design". Norman, on UX design, said it "encompasses all aspects of the end-user's interaction with the company, its services, and its products (Nielsen, 2017)". He further explains user experience relies on the ability to create "empathy for human beings who experience the product or service" that is being created. Empathizing with the user base throughout the design process allows designers to "dig deep into [their] understanding of the user and create solutions that will not only solve a need, but effectively improve [their] users' lives by removing unnecessary pain or friction." Coming from the father of UX design itself, creating empathy between the user and the designer is a major part of the UX design process and should be placed in high regard when working on any project.

Various research has been conducted on what variables of UX/UI design affect customer experience/reception the most. In their study, Badran and Al-Haddad (2018) focus primarily on the categories of utility, usability (to what extent a product can be used by users to achieve specific goals), aesthetics, identification (the recognizability of the product), and value (determined by the users of the product). The variable of value, which is further determined by

the needs and wants of the user, had the highest impact on customer impact, being followed by usability, and utility. As the only variable that truly focuses on the users, it's clear to see why UX design places so much emphasis on its user-centric practices. Being able to empathize with the user makes it easier for designers to uncover what these needs, what makes the customer buy the product initially, and wants, what keeps the customer coming back, are (Oliver, 2014).

There are many things to take into consideration when trying to empathize with someone unknown, because there are many things that make up a person and their identity. These include their race, ethnicity, gender, age, but also components that can be influenced by their surroundings such as social behaviors, and moral standings. The latter can be summed up to be part of their culture, and where they got their values, beliefs, and behaviors (a more detailed description of culture in the context of this paper will be described in a following section).

This paper will be taking a closer look at the consideration of not only the user's culture when it comes to User Experience design, but also the designer's own. Afterwards, a discussion of its importance will be made.

User Experience Design: A Brief Overview

User experience can be formally defined as "a person's perceptions and responses that result from the use or anticipated use of a product, system, or service" (International Organization for Standardization, 2019). While a person's perceptions and responses cannot be controlled, designers *can* control how a given system behaves and looks, essentially creating design features that would lead to a positive user interaction. It is because of this fact that UX design is user-centric, and therefore heavily relies on the designers understanding and empathizing with their users.

In order to achieve a positive user experience, UX designers must follow a design cycle that ensures the needs of the user are fully considered. One commonly used framework is the Design Thinking process, which is a problem-solving approach that puts the user at the center of the design process (Dam, 2019). The Design Thinking process consists of five stages: empathizing, defining, ideation, prototyping, and testing/evaluation. During the empathizing stage, designers seek to understand the user's perspective, their needs, and their pain points through observation, interviews, and other research methods. This is where a majority of time in the process should be spent, as correct understanding of the user and their needs results in higher user satisfaction rates (Badran & Al-Haddad, 2018). In the defining stage, designers synthesize the information gathered during the empathizing stage to create a problem statement that outlines the design challenge. In the ideation stage, designers generate a wide range of potential solutions to the problem statement, using figures established in the defining stage. The prototyping stage involves creating low-fidelity and high-fidelity prototypes of the proposed solution. Finally, in the testing/evaluation stage, the prototypes are tested with users to evaluate their effectiveness and make necessary adjustments before moving forward with implementation. By following this design cycle, UX designers can create products and services that are more likely to meet the needs of their users, resulting in a positive user experience.

When these foundations and stages of UX design are not followed it can lead to a potentially destructive outcome for the application or software being made or refined and its users. A quite recent example includes Ravelry, a website for knitters and crocheters, and the unexpected update to their UI (user interface) in 2020. This abrupt overhaul to the website’s interface included a change to the site’s logo and main color scheme, an introduction of animated features, and a complete redesign of every page. The problem began when the high contrast of

the bold black outlines with the stark white of the page and the bright colors of text boxes led many to experience migraines of varying severity (Joslin, 2020). By far the worst offender though, were the animations which led users to not only experience migraines, but also forms of seizures.

One of Ravelry's main features includes the sharing of patterns by users. Users have the option to have their patterns be bought, and to some, particularly to those with job-limiting disabilities, it was one of their main sources of income. Many with disabilities, especially those with vestibular disorders – disorders that affect the inner ear and can cause dizziness, vertigo, and balance problems – were faced with a decision. Either shut down their reliable source of income or endure the migraines and discomfort that this new update brought (Corke, 2020).

Ravelry's mistake was their choice to do very little, if any, user testing, which would take place in the testing/evaluation phase of design, before a complete release. If they had done so they would have been able to see how their update, however aesthetically pleasing it might have been, rendered the website completely unusable for a portion of their audience. This case brings up the importance of accessibility when designing, but also the importance of creating an empathic relationship between the designer and its users through the use of user testing and surveys or other methods to gain user input.

Establishing this empathic relationship is a large reason for the consideration of this research topic. Is the understanding of culture from both designer and end user imperative for establishing this relationship, and to what degree?

The Definition of Culture & Its Place in UX

Culture is a multifaceted concept that encompasses a wide range of human experiences, practices, beliefs, and values. It is for this reason that so many technical definitions and

comparison models exist. Some examples include the Inglehart-Welzel cultural map, the World Values Survey, and the Lewis Model, all of which make the attempt to capture cultural dimensions. Cultural dimensions are described as “independent characteristics that describe a culture’s preferences to answer basic problems that are common to all societies” (Lachner, 2015). When it comes to UX design, however, the most widely recognized is that of Geert Hofstede (de Souza, 2016), who describes culture as “the programming of the human mind by which one group of people distinguishes itself from another group” (Hofstede Insights, 2019). In Hofstede’s cultural model he describes culture as having five dimensions, “Power Distance (the extent of inequalities and hierarchy that a society tolerates), Uncertainty Avoidance (the level of stress that is caused by unclear and ambiguous situations), Individualism vs. Collectivism (how strong individuals are integrated in and feel responsible for a social group), Masculinity vs. Femininity (the degree of differentiation of gender roles), and Long-Term vs. Short-Term Orientation (the preferred focus of people’s time orientation, on the future or the present)” (Lachner, 2015). Hofstede’s partition of cultural dimensions simplifies the process of comparing two cultures, specifically by geographical location.

To break it down further, Hoft introduces the idea of the “cultural iceberg”, where “approximately only ten percent [of cultural characteristics are] visible above the water surface (Lachner, 2015)” (easily identifiable). Lachner connects these labels to UX design in the following figure (Fig. 1).

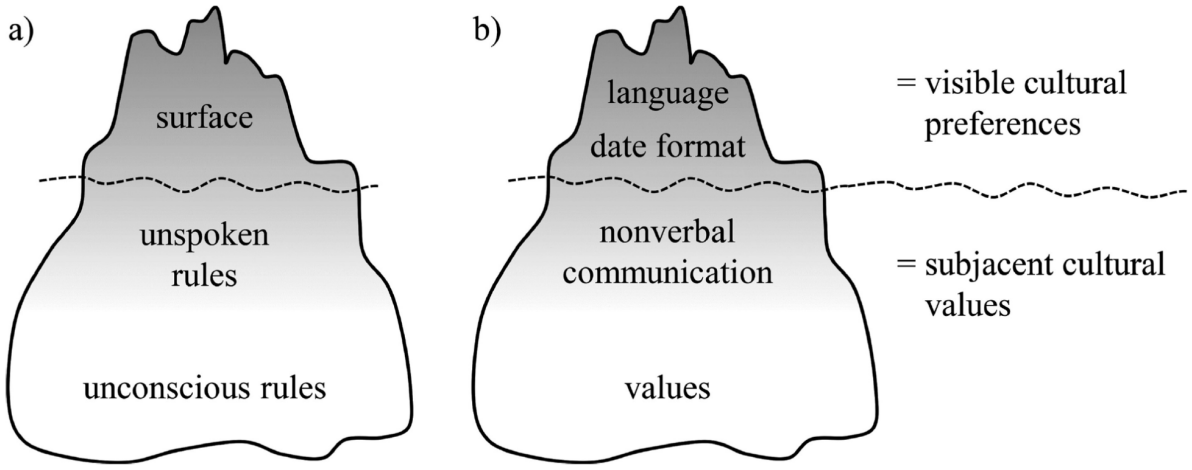

Fig. 1. Iceberg model (a) from Hoft (1995) and (b) associated UX characteristics

The cultural iceberg model and Lachner's translation of it into UX characteristics, provides a good basis of understanding when it comes to culture's role in UX design.

The Consideration of the Designer's Culture: An Example

We all exist with implicit biases, it's something that is unavoidable by nature. As we grow, our environment shapes the person who we become and the underlying ideas or notions we will have about the world around us. It is therefore without a question that designers should keep their potential biases in mind when examining any user base, but to what degree should they keep in mind their own cultural differences specifically?

Li and Hölttä-Otto examine this question in their experiment with Chinese and Finnish users and designers (2020). The researchers presented a mobile payment application to participants from both countries, asking the users to complete a User Experience Questionnaire (UEQ) after having them explore its functionalities. The UEQ provided them with a "comprehensive impression of user experience" from six dimensions: attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty. Designers coming from either country were then given the results of the UEQ from participants in both countries, whose country of origin

remained concealed, and were asked to interpret them. The "Empathic Accuracy Rating" (EAR) system was used to measure the accuracy to which the designers understood the sentiments of the users. The results were split between the two groups created by the researchers, these being "same culture groups" (SCG), whose designers and users were of the same origin, and "different culture groups" (DCG), whose designers and users were of different origin.

The "country comparison tool", made available by Hofstede Insights, allows us to uncover how deep the differences between the two cultures being examined are by comparing the levels from each country for each of the five Hofstede cultural domains (Fig. 2).

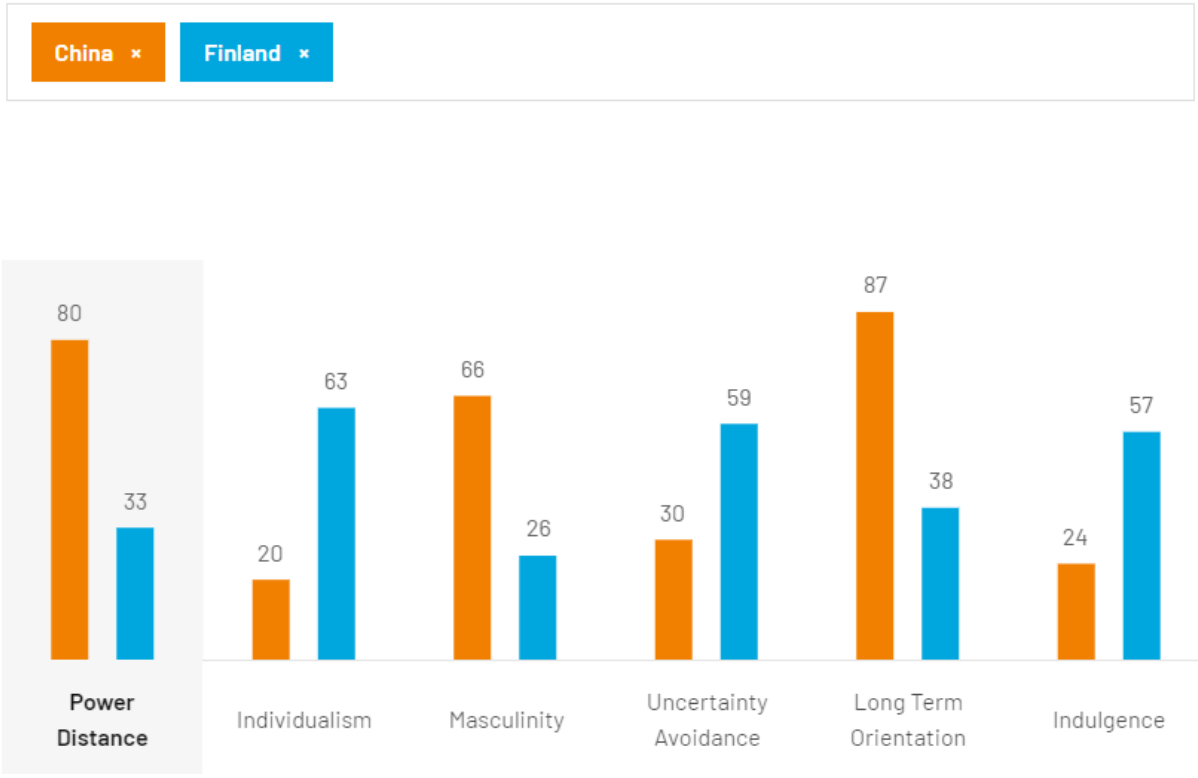

Fig. 2 Comparison of China and Finland's Placement Within Hofstede's Five Dimensions

In every domain, it seems that China and Finland are on the opposite ends of the spectrum. For example, China leans more towards Long Term Orientation, taking actions that will be reaped in

the future, while Finland is the opposite, whose actions are geared to yielding quick results. These differences in domain help us make sense of the results we are about to discuss.

Li et. al. found that overall, the pairings from SCG scored a much higher EAR score than those from DCG, meaning that the understanding between designer and user was highest when they both came from the same cultural background. While discussing these findings they mention, “when users from different countries feel completely different about the attractiveness of mobile payments, it is more challenging for designers to understand the experience of the use from different cultures (2020)”. This implies that the culture of a designer plays a significant part when it comes to their understanding of their users.Without knowledge of a users background, designers heavily rely on their own cultural understanding of the task they are trying to accomplish – which may lead to a conflict between their design solution and the appeal of their solution to their users.

For example, a Finnish designer mentioned “I don't understand why Chinese users think mobile payment is the most dependable. In fact, the widespread application of mobile payment giving hackers a lot of opportunities to steal their mobile accounts,” while a Chinese designer reflected “Compared to cash and bank cards, mobile payment is the most reliable in our country. Because when we use cash, we are worried about receiving counterfeit money. [...] But when using payment, we don't have to worry about these problems,” which links directly back to their country’s differences in the uncertainty avoidance cultural domain. Finland scored higher with an 82, meaning they have a high preference for avoiding uncertainty which is brought up by the designer when they mention their hesitancy towards digital payments as there is a potential for hackers to steal your data. China scored lower with a 30, meaning they are more flexible with potential ambiguity which is showcased by the designer saying the risks are worth the action and

later adding “besides, all of us have bought the insurance. If our mobile accounts were stolen, we would be able to claim from the insurance company,” taking the change in stride and coming up with a solution to potential problems.

The designer's own cultural background and biases can significantly impact the design process and the resulting user experience, making it essential to consider one's own cultural perspective when creating digital products.

The Consideration of the User’s Culture: An Example

Sano-Franchini examines the importance of race in UX design in their paper: “*What Can Asian Eyelids Do for UX Design”.* She reveals two situations in which companies have had to alter their design in order to address racially-motivated misuse of their product by individuals on their applications (2017).

In 2015, Nextdoor, a social network made for use from individuals living in the same neighborhood, was reported to have been a facilitator for racial profiling when it came to users posting “suspicious persons” based on their race rather than actual suspicious activity (Harshaw, 2015). The application at this point had no barriers in order to prevent this from happening, making it something that was overlooked by the design team. To be objective, no designer thinks that their application could ever be part of someone’s racist motivations, but it begs the question, should designers be more considerate of the potential misuses of their application in a sociopolitical sense? That is to say, should designers keep in mind the user’s culture in which their applications are to be launched?

Nextdoor corrected their mistake by adding friction to the interface of their application, breaking “a cardinal rule of contemporary design (Ayers, 2016)”. By adding steps and reminders

to make incident reporting more complicated, Nextdoor believed, users would be more likely to "stop and think" before posting.

In a similar situation, Airbnb found themselves unknowingly playing a role in "facilitating discriminatory action by hosts, a number of whom reportedly rejected potential renters on the basis of race (Sano-Franchini, 2017)". In a similar response, they too decided it best to create friction in the user experience to allow users the time to think about their actions before they commit them.

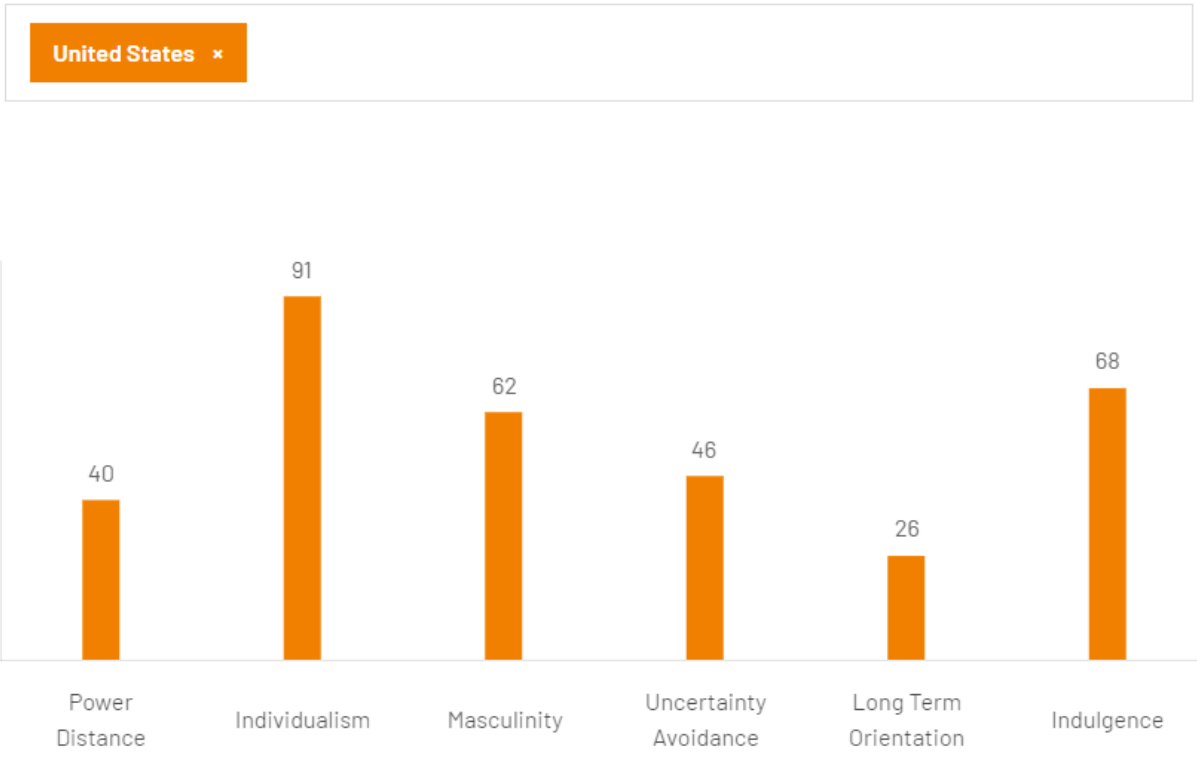

Fig. 3 The United States' Placement in Hofstede's Cultural Domains

The United States scores as one of the most individualistic countries (Fig. 3), getting a 91 in the individualism domain, meaning that they tend to only look after themselves and their direct family without much regard to other individuals around them. Coupled with the country's lower score in Power Distance, which states that all individuals are not equal, it makes sense that

these racially insensitive acts happen so frequently and outwardly and that they may permeate social and business applications.

I believe that the actions taken by these companies were correct, but could have possibly been avoided if the consideration of the society (and therefore the culture) of the groups of users they are designing for. There is a bigger question here about a company's duty to anticipate potential misuse of their platform, and I think it's answered by having designer's think more deeply about their user's society and culture.

Discussion

Sano-Franchini mentions the three "widely accepted understandings about UX design". Firstly, that both designers and users are culturally situated; secondly, that user experiences are shaped by culturally contingent and ideologically laden symbolic representations; and thirdly, that technology design contributes to the articulation of cultural values, logics, and perspectives.

The STS concept of value-laden design aligns closely with the three widely accepted understandings about UX design highlighted by Sano-Franchini; it dictates that design decisions are not neutral, instead they are informed by the designers' values, perspectives, and goals (Forsythe, 2001). With this definition we can assume that *both* designers and users are under the influence of individual and collective values, beliefs, and experiences, as a result of their culture. The notion that user experiences are shaped by culturally contingent and ideologically laden symbolic representations resonates with value-laden design. It recognizes that design choices, such as visual elements, language, and symbols, carry inherent cultural meanings and values. Designers must be mindful of the cultural connotations associated with their design decisions to ensure that they align with the intended user experience and do not inadvertently perpetuate biases. Lastly, the understanding that technology design contributes to the articulation of cultural

values, logics, and perspectives directly relates to value-laden design. Designers play a crucial role in shaping and influencing cultural values through their design choices. They need to consider the potential social impact and implications of their designs, recognizing that their creations can reinforce or challenge existing cultural norms and values, as seen in the examples of NextDoor and Airbnb.

It is because of this and the examples presented earlier in the paper, that I truly believe the consideration of culture while designing should most definitely be a large part of the empathizing phase.

Conclusion

In conclusion, UX design is a critical aspect of creating successful applications, and it relies heavily on understanding and empathizing with the end-users by understanding the needs and wants of these users. Culture plays a significant role in UX design, both in terms of the user's culture and the designer's own cultural background. Understanding the cultural dimensions and considering cultural differences can enhance the designer's ability to empathize with users and create more effective designs. The example of Chinese and Finnish users and designers demonstrates how designers from the same cultural background have a higher understanding of their users compared to those from different cultural backgrounds. Similarly, considering the user's culture is vital to avoid potential misuse or discrimination in application design. Nextdoor and Airbnb's experiences show the importance of addressing racial profiling and discriminatory actions by adding friction to the user experience. In conclusion, considering both the user's culture and the designer's cultural background is imperative for establishing a solid empathic relationship and creating successful UX designs.

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