

Abstract

In this paper, I report on a study that explored the relationships among gaming preferences and cultural differences. I conducted interviews with seven gamers from five countries to understand their gaming preferences; additionally, I used Hofstede's Value Survey Module to evaluate their cultural values. Through an inductive analysis, I identified several themes in participants' gaming preferences that demonstrated a clear cue of influence from their cultural values: (1) social interaction was associated with player's value of uncertainty avoidance, individualism/collectivism and power distance; (2) tension and humor in game was associated with high uncertainty acceptance; and (3) openness and freedom was related to individualism. Among these gaming aspects, social interaction and tension were the mostly favored ones among the participants.

1. Introduction

In this exploratory study, I conducted interviews with seven gamers from five nations, aiming at exploring relationships among cultural differences and preferences of game types and gaming aspects. In particular, I was interested in understanding: (1) to what degree could individual gaming preferences be attributed to his/her cultural values; and (2) how the gaming preferences and cultural values are related.

Many researchers have found that gaming experiences and perceptions vary across cultures when the same game is played (Chuah et al., 2007; Hofstede & Murff, 2011; Meijer et al., 2006). Players usually bring culturally saturated assumptions, knowledge, and information about interactions into games (Consalvo, 2009; Hofstede, 2007). Hofstede et al. (2010) defined culture as "the rules of the social game." As such, people's cultural values pervasively influences their day-to-day life, and by extension influences game play and game design activities.

Researchers have argued that game designers should pay special attention when designing a game for a different culture or in a cross-cultural context (Hofstede, 2007; Khaled et al., 2009; Meershoek et al., 2012). Many have also explored game design methods that facilitate consideration of cultural differences (Khaled et al., 2009; Meershoek et al., 2012). However, methods used in previous research were based on subjective analysis of cultural differences and non-empirical mapping between cultural conflicts and game design components. In other words, there is little knowledge as to the relationships among cultural value differences and game play preferences beyond deductive predictions. In this study, I aim at bridging this gap and focus on an inductive inquiry as to how people's gaming preferences might be influenced by their cultural values. I believe by exploring this aspect of gaming, we will be able to proceed to a stronger position to inform culturally sensitive game design.

In the next subsections, I provide background for the study: in section 1.1, I describe the Hofstede's cultural dimensions, which is the theoretical framework that guided this investigation; in section 1.2, I

describe Cailliois's game classification scheme, which is used to frame discussion about gaming preferences in this study; and in section 1.3, I discuss works that are closely related to this study.

1.1 Cultural Dimensions

This study is framed around the cultural dimension model proposed by Hofstede. Aiming at distinguishing key characteristics of national cultures, Hofstede et al.'s model is comprised of six cultural value dimensions: (1) power distance (PDI), which measures the extent to which the less powerful members expect and accept that power is distributed unequally; (2) level of individualism (IDV), which measures the degree to which individuals are independent from each other (as opposed to collectivism, which depicts the degree to which individuals are integrated to groups); (3) level of masculinity (MAS), which measures the distinction of emotional roles between genders (as opposed to femininity, which depicts the overlap of emotional gender roles); (4) uncertainty avoidance (UAI), which measures the extent to which the members of a culture feel uncomfortable with ambiguity or unknown; (5) long-term orientation (LTO), which measures the degree to which members of a culture attach importance to future rewards (as opposed to short-term orientation, which is related to immediate situations or rewards); and (6) indulgence versus restraint (IVR), which measures the tendency of yielding to human desires (Hofstede et al., 2010).

Hofstede predicted possible differences of game preference and gaming behavior with respect to each cultural dimension (Hofstede, 2007); the summary for the first four dimensions is shown in Table 1. In this study, I focused on exploring the relationship among these four dimensions and gaming preferences.

Table 1 Hofstede's prediction of relationships among gaming behaviors and cultural dimensions

Cultural Dimension		Gaming Behavior
Identity	Collectivism	<ul style="list-style-type: none"> Gaming group is stable and hardly changed. Teaming with stranger may be hard.
	Individualism	<ul style="list-style-type: none"> Gaming group is voluntary. Easy to team with strangers.
Hierarchy	High power distance	<ul style="list-style-type: none"> Usually bring real-world hierarchy into game.
	Low power distance	<ul style="list-style-type: none"> No tendency to bring real-world hierarchy into game.
Gender	Masculinity	<ul style="list-style-type: none"> Winning is a major issue. Expect game to be competitive. More intolerant to transgressions/cheatings and insults.
	Femininity	<ul style="list-style-type: none"> Winning is not the goal. Expect game to be corporative. More tolerant to transgressions/cheatings and insults.
Fear of the unknown	Strong uncertainty avoidance	<ul style="list-style-type: none"> Prefer rule-based gaming; dislike games that include ambiguity. Want to be well prepared; anxious about making fools about themselves.
	Weak uncertainty avoidance	<ul style="list-style-type: none"> Curious about different possibilities in games. Like surprises in games.

1.2 Game Classification

Roger Cailliois provided a useful classification of game play (Cailliois, 2001). He classified game play into four fundamental categories: (1) competitive play (agon), where players or playing teams are in opposition; (2) chance-based play (alea), where play is based on a decision independent of the players;

(3) simulation play (mimicry), where play presupposes a temporary acceptance (e.g. an imaginary universe); and (4) vertigo play (ilinx), where play consists of an attempt to momentarily destroy the stability of perception (Caillois, 2001). He then placed each category into a spectrum from “paidia,” which is improvisational and spontaneous activities to “ludus,” in which play is structured and follows strict rules. Caillois argued that this classification framework “reflect(s) the moral and intellectual values of a culture” and “contributes to their refinement and development.” In this study, I used Caillois’s classification scheme to frame discussions about preferences of game types and gaming aspects.

1.3 Related Research

Many researchers have found that gaming experience and perceptions vary across cultures when the same game is played (Chuah et al., 2007; Hofstede & Murff, 2011; Meijer et al., 2006). For example, Hofstede & Murff (2011) reported a surprising phenomenon from students in her MBA classes. Taiwanese students displayed a totally different game dynamic from U.S. students when playing ‘SO LONG SUCKER,’ a classic bargaining/economic strategy game designed by Americans. The game is designed for a 20-minute play session (i.e., that is usually how long it took for U.S. participants) and the goal is to eliminate other players and be the last undefeated player. However, when played by Taiwanese participants, “collaborative rather than antagonistic behaviors occurred,” and the game could last for hours without kicking anybody out (Hofstede & Murff, 2011). The authors attributed this phenomenon to the cultural differences between the Taiwanese and American players; the authors argued that the differences highlighted the role of unwritten rules in game play.

Similarly, Chuah et al. (2007) reported on a study that examined differences in how Malaysian Chinese and UK students played Ultimatum with opponents of their own culture as well as of the other culture. Ultimatum is a highly interactive economic experimental game in which two players decide how to divide a sum of money that is given to them, with the first player (the proposer) proposing how to divide the sum and the second player (the responder) either accepting or rejecting this proposal. In their study, Chuah et al. found: (1) Malaysian proposers tend to make significantly higher offers to their compatriots than to UK responders, and (2) Malaysian responders rejected significantly more offers than their UK partners in cross-national games (Chuah et al., 2007). While this study was limited to an economic simulation game, it demonstrated that with the same written rules gaming experience and outcome could be dramatically different when played with people from different cultures; i.e. different unwritten rules applied in each culture.

Researchers have argued that game designers should pay special attention when designing a game that would be played by a different culture or in a cross-cultural context (Hofstede, 2007; Khaled et al., 2009; Meershoek et al., 2012). Many have explored game design methods that facilitate consideration of cultural differences (Khaled et al., 2009; Meershoek et al., 2012). For example, Khaled et al. (2009) redesigned and evaluated a serious game aimed at smoking cessation. The game was originally designed for New Zealand European players who are considered individualistic; the redesigned game was for Maori players who are considered collectivists. After evaluating the game with participants from both cultures, they found that the culturally matched conditions yielded greater persuasion; i.e. the players who played the version that is designed for their culture would have a greater positive change in intention to quit smoking than playing the other version (Khaled et al., 2009).

In another example of considering culture in game design, Meershoek et al. (2012) proposed ‘Culture Driven Game Design Method.’ His design method focused on adjusting a game to the culture of its players. The method includes three iterative steps: (1) assessing the cultural difference of play-testers and target players; (2) translating cultural dimensions into game elements; and (3) evaluating applicability (Meershoek et al., 2012). The first step, assessment, uses Hofstede’s framework. For the second step, the authors created a ‘Cross Dimensional Matrix’ where potential conflicts between cultural dimensions are mapped against a set of game dimensions. The authors evaluated the method against the traditional play-testing method in two case studies and found that their method resulted in similar suggested design modifications with the traditional play-testing method that involved participant from different cultures. One limitation of this method is that the mappings between cultural dimension and game dimension are based on predicted evaluations. In addition, the game dimension model they used mainly focuses on simulation games; it missed some aspects (e.g. randomness) that are crucial for other game genres. In this proposed study, I will address these gaps.

2. Methods

In this section, I describe the seven participants, the data collection instruments (i.e. the interview protocol and the Hofstede’s Value Survey Module), and the data analysis procedure.

2.1 Participants

Seven participants were recruited from my personal friends, acquaintances, and international students who attend DePaul University. All participants spent more than three hours per week playing games. The nationalities of the participants are shown in Table 2.

Table 2 Nationality of participants

Participant ID	P1	P2	P3	P4	P5	P6	P7
Nationality	Turkey	Belgium	Belgium	China	China	Poland	U.S

All participants were living in the United States and fluent in English. All but the U.S. participant were international graduate students who studied in an U.S. university for between three months to two years. The U.S. participant was a young professional who had been working for two years. All but one Chinese participant (P4) were male and all participants aged between 25 and 29 years old.

2.2 Instruments

This study was based on two data collection instruments: (1) semi-structured interviews were conducted to understand participants’ gaming preferences and (2) the Hofstede’s Value Survey Module was used to evaluate the participants’ reflection on their cultural values.

2.2.1 Interview protocol

I conducted one-on-one interviews in October of 2012 at DePaul University and participants’ homes; each interview took between 30 to 45 minutes. Interviews with the Chinese participants were conducted in Chinese, while others were conducted in English. All interviews were recorded and later transcribed. Participants were asked to talk about: (1) what games they were recently playing; (2) how they usually choose the games; (3) to describe the first game they played and got excited; (4) to describe

their all-time favorite and least favorite games and reasons; (5) to tell a story about their best and worst gaming experience; and (6) what features or elements they would include if they could design games for themselves.

2.2.2 Value Survey Module 2008

At the end of each interview, participants were asked to fill out the English version of the Value Survey Module 2008 (Hofstede et al., 2008). The survey contains 28 questions that are structured along Hofstede's six culture dimensions. In this study, the survey was used to evaluate the culture values from the participants' perspectives.

2.3 Data analysis

After the interviews were transcribed, I analyzed the data inductively to find themes of gaming preferences. I coded for the game types and gaming aspects the participants mentioned and coded for the themes in their best and worst gaming experiences. The Value Survey results were calculated based on the formulas provided by Hofstede et al. (2008). As one calculation step, the results were normalized to make all scores range between 0 and 100.

3. Results

In this section, I summarize the cultural values of the participants based on Hofstede's dimensions and the themes on their gaming preferences.

3.1 Cultural values

The participants' reflections on their cultural values in power distance (PDI), individualism (IDV), masculinity (MAS), and uncertainty avoidance (UAI) are shown in Figure 1. The PDI, IDV, and UAI measures of the participants were nicely diversified along the dimensions. The MAS measure tended to be high; that may due to that the sample was biased towards the male gender.

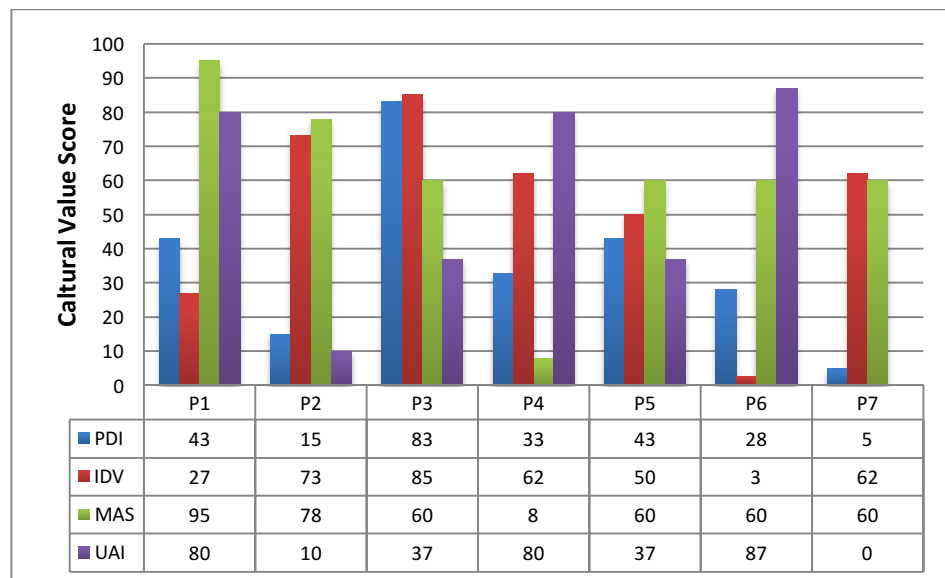


Figure 1 Cultural value of participants

3.2 Gaming preferences

I identified four themes in participants' gaming preferences that demonstrated a clear cue of influence from their cultural values: (1) social interaction (i.e. cooperative and/or competitive play), (2) tension in game, (3) openness and freedom, and (4) humor. Table 3 summarized the gaming preferences of each participant.

Table 3 Gaming preferences

Gaming aspects	P1	P2	P3	P4	P5	P6	P7
Social interaction			X		X		X
Tension		X	X		X		
Openness/freedom				X			X
Humor		X					X

** X indicates that the participant mentioned that aspect.*

3.2.1 Social interaction

While all participants mentioned that they played games with other people, three participants (P3, P5, and P7), all tend to be uncertainty acceptant, explicitly expressed their preference in social interaction in the games. However, they tended to prefer different types of social play. Specifically, P5 mentioned that he liked competitive play (i.e. to play against co-players) and talked about playing with his personal friends (e.g. college classmates); P7 expressed preference in cooperative play (i.e. to work with co-players against the game) and mentioned playing with his family (i.e. parents and wife); and P3 liked to play with his online friends and talked about both competitive and cooperative aspects (i.e. to work with co-players against other players).

To further understand participant's preferences of social interaction in games, I analyzed their social gaming frequency in these three types of social play; i.e. (1) playing online, (2) playing with friends, and (3) playing with families. In a scale from one to five (with one being very low and five being very high), I coded for their gaming frequency of these three types. I then coded the overall preference of social gaming based on the sum of these three scores. Table 4 summarized the results.

Table 4 Preference in social gaming

Participant ID	Playing online	Playing with friends	Playing with families	Overall preference in social gaming
P1	Low (2)	Very Low (1)	Very Low (1)	Low
P2	Very Low (1)	Low (2)	Medium (3)	Medium
P3	Very High (5)	Medium (3)	Very Low (1)	High
P4	Very Low (1)	Low (2)	Low (2)	Low
P5	Medium (3)	Very High (5)	Very Low (1)	High
P6	Very Low (1)	Low (2)	Very Low (1)	Low
P7	Very Low (1)	Low (2)	Medium (3)	Medium

In alignment with their self-reported preference, I identified two participants (P3 and P5) as having high preference in social gaming; for example, P3 mentioned that he almost exclusively plays online games or plays games with friends:

"It's always excellent when I play with four people or five people and we know what to do and we know what each others are supposed to do and cover each other. Playing together, we always have a good time. When I was playing alone I usually don't play too long, because I get frustrated since I don't have anyone to play with."

Although P3 and P5 both had high in preference in social interaction, they liked different types of social gaming. This difference in preference tends to be associated with their individualism/collectivism values. P3, who is very individualistic (see Figure 1), emphasized his preference in online gaming of First Player Shooter (FPS) games and talked about how he met friends all over the world in that game; P5, who is considered more collectivistic, mainly talked about playing with his personal friends (e.g. college classmates).

In addition, three participants (P2, P4, and P7) mentioned that they played with their families on regular basis or in special occasions as a tradition (e.g. holidays); all tend to have a very low level of power distance (see Figure 1). For example, P2 discussed the role of game as a common context to gather the family together:

"So if we (the family) play together, most of the time we try to pick something very simple, so that we can have fun, you know. You don't have to make too much effort. You can talk and laugh and then drink or something. It's like an environment to just put people together."

3.2.2 Tension

While Hofstede did not explicitly discuss how tension was related to cultural dimension, uncertainty avoidance (UAI) is associated with tolerance of ambiguity. Three participants (P2, P3, and P5) who all scored lower in UAI (thus ambiguity tolerant) discussed preference in the tension brought by the games. They expressed preference in fast-paced gaming or games that require fast actions/reactions. For example, P3 said:

"I like the FPS (first person shooter) the most because it requires a lot of actions and you can really immerse yourself ..."

When talking about the game that he is currently playing, P2 also hit this aspect:

"If you take the Super Meat Boy, it's very simple but you feel you are in control. You feel your character respond perfectly to what you are doing with your controller. It's a very fast and very intensive game that makes you nervous."

3.2.3 Openness and freedom

Two participants (P4 and P7), both were considered very individualistic, mentioned their preference in the openness and freedom provided in the games. They valued the creative aspect of games and

attached importance to the feeling of novelty. For example, P4 mentioned that she liked to play life simulation games (the games in which the player freely controls one or more virtual life forms):

"I really liked 'the Sims.' It's kind of a life simulation game. I mean, you can actually do anything you want – things you can or cannot do in real life. You can create a lot of things. I liked the creativity in it."

P7 also talked about his preference in sandbox games. Those are the games where minimal constraints are imposed and the player could roam and modify the world freely and decide how they play. He said:

"[Playing Fallout 3 (a sandbox game),] it is just like you go around and then you can do whatever you want to do in the game. ... You kind of make of your own story in this game. So I mean there's the imagination that I really like."

3.2.4 Humor

Two participants (P2 and P7), both had a very high level of uncertainty acceptance, mentioned that they liked the humor in games. For example, when P2 talking about a game called 'Time Splitter,' he said:

"To the most critiques, it's very realistic; to me it's not important to be that realistic. And the graphic is not good but I think it's not a problem. But there is a form of humor in the game. The universe is crazy, the characters are crazy. So that made it very fun."

4. Discussion

I found patterns indicating that weak uncertainty avoidance was associated with preference in socialization, tension, and humor in games. There was also a trend that high individualism relates to preference in open-world games and high frequency of online gaming. I found that most participants had multiple preferred gaming aspects and the participants who had different cultural values shared some gaming preferences.

4.1 Relationships among gaming preferences and cultural values

While the results may not have a high external validity due to the small sample size, the patterns on the relationships among participants' gaming preferences and their cultural values emerged. Weak uncertainty avoidance (i.e. low UAI) tended to be associated with high preference in socialization in my sample. I speculate that this relationship might be because that social gaming (especially online gaming) involves a great deal of uncertainty originated from the co-players. In addition, other cultural dimensions such as IDV and PDI can influence people's preference on different types of social gaming. For example, people from low IDV societies tended to play more with people from their in-groups and prefer stable game groups.

In addition, weak uncertainty avoidance (UAI) also seemed to associate with preferences in tension and humor in the games. This supports Hofstede's claims that people from weak uncertainty avoidance cultures are comfortable with unfamiliar risks and appeal to humor in advertisements (Hofstede et. al. 2010). On the other hand, preferences in openness and freedom were not associated with low UAI, which was contrary to Hofstede's prediction. Instead, they were associated with high individualism. An

interpretation of this is that while introducing ambiguous and unknown, open-world games also provide players more control to deal with uncertainty; people from individualistic cultures would tend to favor this control.

4.2 Multiple gaming preference and cross-cultural gaming preference

Four out of the seven participants liked more than one aspect of the games. For example, P7 mentioned that he liked the social interaction, the openness and freedom provided in games, and humor in games. I also found that participants who came from different cultures sometimes share some common gaming preferences. Specifically, the mostly favored gaming aspects among the participants were social interaction ($N = 3$) and tension in games ($N = 3$). These findings indicated that gaming preference is a complex phenomenon, which might be influenced by multiple factors; i.e. cultural differences are only one factor among others that could influence gaming preferences. I would argue that this would be one of the reasons why some games (e.g. Super Mario Bros) were successful globally.

5. Limitation and future work

Since this study only involved seven participants, the results may not be generalizable. Moreover, I speculated that only a limited portion of the relationships among gaming preferences and cultural values were discovered due to the small sample size. Thus in the future, I would like to explore this study more extensively; this would include interviewing a larger sample of gamers from more diverse cultural backgrounds. After knowing more qualitative relationships among gaming preferences and cultural values, I would also like to conduct survey studies to include more participants and allow quantitative examination of the correlation.

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