

## Analysing cross-cultural design in advergames: a comparison between the UK and Brazil

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### Abstract

This paper presents the findings from a study of advergame design elements paying particular attention to cross-cultural consumer attitudes towards advergames and sponsored brands. From a thorough literature review, an integrated framework for advergames across cultures (CAKE) has been designed, composed of game design elements, brand perspectives and cultural characteristics. Utilising the CAKE framework, 40 mobile advergames from Brazil and the UK were studied through a content analysis, followed by an interview of 22 game players from both countries. Our findings illustrate a cultural difference in the attitudes towards advergames and preferences regarding familiar and popular elements inside the advergame. It is felt that the CAKE framework may prove itself suitable for the development of cross-cultural design in advergaming and future research in the area. Implications for advertisers, designers and developers are discussed.

**Keywords:** games, advergames, marketing games

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### 1. Introduction

Culture shapes the way people behave. As a system of patterns, culture is what differentiates people of one group from the other [1]. Within the games industry, “culture”, from a nation point of view, has taken the form of “localisation”, which is usually a translation of content from one language to another [2]. *Culturalisation*, through game content adaptation [3] and cultural appropriation of game elements [4] are also other approaches the integrate culture within games design. This could bring many challenges for designers, particularly with regards to advergame design. Advergames are games built around a brand message [5]. Previous research showed that members from different cultures differ in their attitudes towards advergames and this is mediated by the integration of the brand in the game [6]. However, research on the role of advergaming within a cultural paradigm is still limited [7].

Understanding culture is crucial in advertising and marketing research, since people have different values that mediate consumer behaviour; symbols, heroes and rituals compose cultural values that are often mediated by marketing communications [8]. Cross-cultural research in advertising and consumer behaviour has given a lot of attention to comparisons between Eastern and Western cultures, with Latin American countries lagging behind in terms of research undertaken [9,10]. This gives an opportunity to research countries such as Brazil. Brazil has also the largest gaming market in Latin America, with 35% of game players [11]. However, when compared to developed countries such as the UK, the Brazilian gaming market is still in expansion. In the UK, the videogames industry is worth around £1.72 billion for the British economy [12] and the UK games market is the 5<sup>th</sup> largest in the world [13]. On the other side, Brazil is only in the 13<sup>th</sup> position of the top 100 games market in the world [14]. It is also possible to spot differences in brand attitudes and consumer behaviour between Brazilians and British

consumers. According to a report published by Havas Media [15], 93% of British consumers would not care if brands disappear, while 42% of Brazilians said that they would care if brands did not exist. This shows a disconnection and a lack of engagement between brands and consumers, which could be influenced by advergame design.

Considering this, the research questions that guided this study are:

- RQ1: What are the key design elements of cross-cultural advergame design?
- RQ2: What are the influences of key cross-cultural design elements of advergames within Brazilian and British consumer behaviour?

To do this we firstly created an integrated framework for advergames across cultures (CAKE), which combines research theories on cross-cultural games design, cross-cultural Human-Computer Interaction (HCI) and cross-cultural consumer behaviour. The comparison between Brazil and the UK emerged in order to ground the principles from the CAKE framework. With this in mind, we conducted a content analysis of 40 advergames from Brazil and the UK, followed by interviews (22 British and Brazilians game players). We conclude this paper with a discussion about the utilisation of the CAKE framework in order to understand cross-cultural issues in advergame design in a holistic way and the implications of our findings to future research in the field of games design.

## 2. Theoretical background

### 2.1. Cultural Characteristics of Brazil and the UK

Brazil and the UK differ considerably in specific aspects such as: individualism, power distance and uncertainty avoidance [1] (see Table 1). This means that Brazilians would be more susceptible to accept rules, reinforcing non-equal relationships, whereas British would feel comfortable with non-planned events in the future. Those features could explain the reasons why Brazilian consumers value social status (i.e. power distance) and trust in experts' opinions [16] before deciding to purchase a product (i.e. uncertainty avoidance) [17]. Brazil is also a high context culture [18]. This aspect could be reflected on advertising since emotional, visual and entertaining appeals are more utilised in high-context cultures [19].

In the UK, British consumers tend to be slightly pessimistic and against hard sell advertising [9]. People in the UK are also more disposed to egalitarianism (honesty, equally and social justice) and intellectual and affective autonomy (curiosity, creativity and freedom) [20,21]. Thus, advertisers should be communicating creative messages to British consumers.

These essential differences between Brazil and the UK that could help to contextualise issues regarding advergames across cultures (see Table 1). Thus, considering such expectations and cultural variations, it is necessary to understand: (1) how advergame design influences consumer behaviour and (2) how culture influences the design of games and consumer behaviour.

Table 1 Comparison between Brazil and the UK according to cultural dimensions

Cultural dimensions	Brazil	UK
Individualism [22]	<b>38 (low)</b> People are integrated into groups and extended family. Communication is contextual.	<b>89 (high)</b> Individualistic, private friends and direct family. Happiness is related to personal accomplishment.
Power Distance [22]	<b>69 (high)</b> Hierarchy and inequalities are acceptable. Symbols of power in communication.	<b>35 (low)</b> Inequality should be decreased. People should be treated as equals.
Uncertainty Avoidance [22]	<b>76 (high)</b> This is general for Latin American countries. They need rules and a very structured life.	<b>35 (low)</b> British do not detail future planning (the goal is clear). They are happy not knowing the future.
Context [18]	<b>High context</b> (intuitive, contemplative, valuing interpersonal relationships, indirect)	<b>Medium context</b> (lower than Brazil). Could vary between being indirect and direct, valuing logic and facts
Time [18] Cultural value orientations [21]	Polychromic Embeddedness, between harmony and mastery	Monochromic Intellectual and affective autonomy (creativity, curiosity and excitement), mastery

### 2.2. Advergame Design and Consumer Behaviour

Current literature of advergame effectiveness follows aspects concerned with the attitudes towards the advergame and the brand, which could be mediated by several factors (see Table 2). Product involvement [23–25], congruity [23,25,26], product-game congruity [27,28], flow [29,30], brand familiarity [31,32], arousal [29,33], brand fit [34] are the main factors related to advergame effectiveness.

The integration of brand features into the game is an important aspect to measure advergame effectiveness since advergames are an evolved form of product placement [23]. Consumer involvement also varies across cultures as perceptions and attitudes towards brands could be socially constructed [35]. Brand familiarity can also influence advergame effectiveness [31,32], suggesting that previous experiences with the brand affect the way people react to advergames.

While analysing advergame effectiveness, there are also issues related to the game itself. For instance, experiencing ‘flow’ in an advergames can be positive for consumers [29]. Since flow can be influenced by the balance between in-game challenges and player skills [36] and the level of telepresence inside games (i.e. technological features of the game [37]) [38], the way the advergame is designed would impact the player experience. Although this experience could vary according to the individual’s skills, it can also be a matter of culture, since people tend to prefer interfaces that are already culturally-adapted (or localised) [39]. This aspect is expanded in the next section.

Table 2 Determinants of advergame effectiveness according to the literature

Advergame effectiveness	Determinants	References
Arousal	Curiosity	[29,33]
Flow	Telepresence, balance between skills and challenges	[29,30]
Telepresence	Interactivity and media richness	[37,38]
Product Involvement	Brand category and consumer behaviour	[23–25]
Congruity /Integration or Brand Fit	Brand identifiers inside the advergame	[25,27,28,34]
Brand familiarity	Brand identifiers, associations	[32]

### 2.3. Cross-cultural games and Human-Computer Interaction (HCI)

In HCI, culture is often treated through the lens of localisation, usually in the interface level [40]. Variables related to interface design across cultures that could be adapted are represented by status presentation, multi-tasking, diffuse versus specific relationships, particularism versus universalism behaviour, high context versus low context and blame transference [39]. Games follow the same perspective, particularly through the adaptation of the game content in order to fit a culture and a context [3]. The incorporation of symbols, colour, knowledge processing and location is also crucial for cross-cultural games [41]. This adaptation goes beyond translation and evokes changes in the game content through the lens of *culturalisation* [3]. Game mechanics can be also tailored to fit one culture [42,43]. Also, the adaptation of game mechanics, storyline and interface design can be investigated through cultural appropriation [4]. Other aspects such as the level of game experience and computer exposure can also influence player’s performance in different cultures [44]. Thus, advergame design could also be culturally-adapted following a similar process from cross-cultural HCI.

On the other hand, an important element of advergames is the message. Since people from different cultures are persuaded by different aspects of advertising [16], the way the message is presented in advergames is essential for advergame effectiveness across cultures. If following the Persuasion Knowledge Model (PKM) from Friestad and Wright [45], consumers who feel persuaded might have negative attitudes towards the advertising itself; thus, the sense of intrusiveness of the advertising message could evoke different attitudes towards advergames. This intrusiveness could also be mediated by culture [6].

Considering this, understanding the influence of advergame design in consumer behaviour across cultures has two sides: one from the perspective of the consumer and another from the actual advergame design. The challenge is how to integrate those elements and how to use them to explore this research area.

### 3. A framework for advergaming design across cultures (CAKE)

The framework for advergaming design across cultures (CAKE) (see Figure 1) is a combination of two sides of the triad cross-cultural games and HCI, cross-cultural consumer behaviour and advergame effectiveness: game, advergame and advertising features and player/consumer characteristics (see Table 3). The acronym CAKE has been used since the framework has been built as a layered framework, resembling a tiered cake.

Table 3 Components of the two sides of the triad cross-cultural games and HCI, cross-cultural consumer behaviour and advergame effectiveness

	Cross-cultural games, cross-cultural HCI and cross-cultural advertising	Cross-cultural consumer behaviour	Advergame effectiveness
Game, advergame and/or advertising features	Game content and context [3]; Advertising appeal [46]; Visual representations, graphics, icons, colours [41]; Game rules [43]; Cultural appropriation [4]	Integration of symbols, rituals and heroes [8]; Product attribute vs. consensus information [16]; Product evokes different interests [47]	Integration between the brand and the game [34]; Game balance [29,30]; Interactivity and media richness [37,38]; Brand category [25,27] Brand identifiers [25,28,32]
Player/Consumer characteristics	Meaning by gameplay [48]; Gaming knowledge [44]	Cultural values [8]; In-group or others benefits [49]; Cultural dimensions [50,51]	Arousal [33,52]; Flow [29,30] Product involvement [23–25]; Brand familiarity [32]

The CAKE framework is a holistic framework with the aim to provide insights and components for the analysis and understanding of advergames across cultures. This relationship is illustrated by 4 layers:

- *Content*, composed of advergame design elements, including visual interface, game rules, the advertising message and narrative/storyline.
- *Consumer*, composed of psychological outcomes of the interaction between the consumer and the advergame (e.g. advergame effectiveness) and consumer values. This layer is the base of consumer behaviour and player experience.
- *Culture*, composed of two sides: cultural representations, from the content side and cultural values, from the consumer side.
- *Context*, composed of two sides: advergame theme, from the content side and external factors, from the consumer side, representing factors that could influence consumer behaviour (e.g. economic and environmental factors).

The main premise of the CAKE framework is that particular advergames elements could favour more one culture instead of others. We expect to address this by mapping the advergame design elements and investigating the impact of such elements in consumer behaviour while comparing Brazil and the UK. In the next section we discuss the methodology adopted to ground and validate the CAKE framework in the context of Brazilian and British cultures.

#### 4. Research methodology

According to the CAKE framework, it was expected that both the advergame design and players' attitudes towards advergames would differ in Brazil and the UK. This is based on the cultural characteristics of Brazil and the UK (see Table 1). For example, since Brazil is a collectivistic culture [22], Brazilian players could prefer social advergames or advergames that enhance social features.

Conversely, since the UK is an individualistic culture [22], British players could prefer advergames that focus on the game mechanics and personal accomplishments. Moreover, since Brazil has a higher contextual level than the UK in terms of culture [18], Brazilian players could prefer contemplative and intuitive messages. In contrast, since British people are more disposed to honesty and social justice [21], they could prefer messages that involve social causes. Additionally, because Brazil has a higher Uncertainty Avoidance (UA) than the UK [22], Brazilians could prefer simple advergames with clear outcomes and less risky decisions, whereas British players could prefer more complex advergames. The expectations that follow this study have two sides: one from the perspective of the players and the other from the perspective of the advergame. Thus, considering that Brazilians would prefer advergames with social elements, as they are a collectivist culture, the Brazilian advergames should have social features (e.g. social media integration), in order to make the advergame more effective for Brazilians. Similarly, if considering British cultural preferences towards autonomy, British advergames would have elements that provide control over the game. These aspects are discussed and expanded in the next sections.

#### 5. Content analysis

The aim of the content analysis was to identify differences and/or similarities between Brazilian and British advergames. For the analysis, we followed the premises of Kassirjian [53] through a process of cluster sampling, theme (advergame) as unit of measure and categories, represented in the coding sheet. In order to verify quality of the results, a second coder (researcher) classified the advergames based on 10 advergames using the same coding scheme. Agreement with the first coder was very high on the final coding of each game (inter-coder reliability of 95%). Disagreements were minor and were resolved by the two coders.

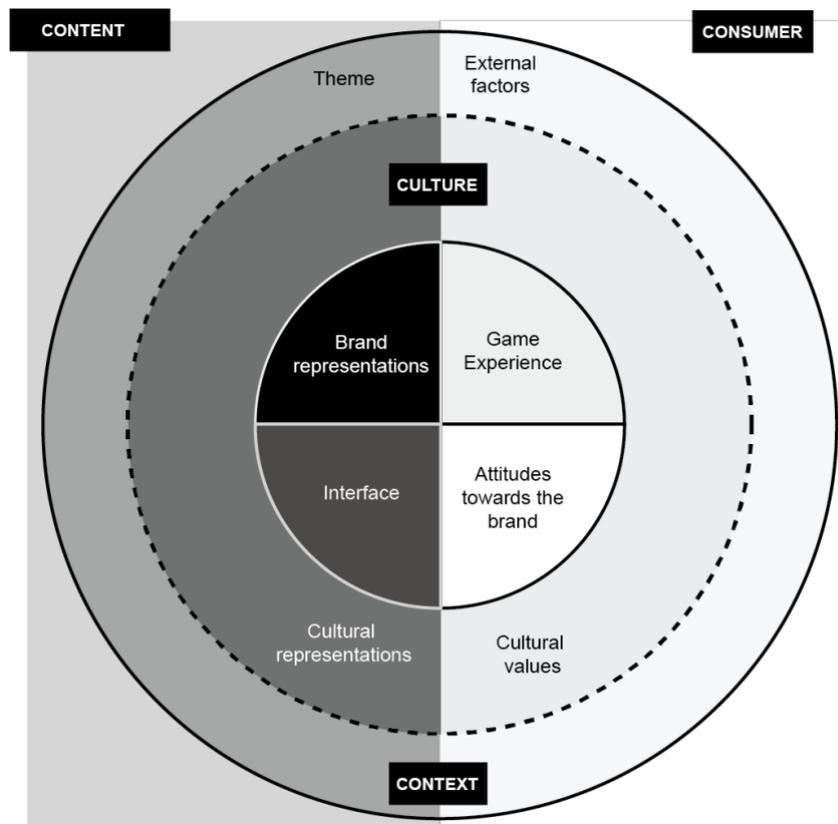


Figure 1 The framework for advergame design across cultures (CAKE)

### 5.1. Sample selection

In this study, 40 mobile advergames were selected (see Appendix B, Table B.1, for the list of advergames). Since it was necessary to gather a representative sample of advergames that are in the market, we chose mobile advergames for this analysis. Reasons for this platform choice are the scenario of the mobile use growth [54] and, consequently, its popularity, which means that more people would be playing mobile games. The search for mobile advergames was conducted through the utilisation of Apple Store lists from each country, gathered from the iTunes website, downloaded by the researchers and tested in mobile phones. The choice of the advergames was defined by game popularity/ranking and availability in the App Store (from A-Z). For that, we took into consideration the following criteria:

- The games should be featuring a brand/product with the aim of bringing an advertising message to the public;
- Advergames from Brazil should be in Brazilian Portuguese

- Advergames from the UK should be in English
- The number of the selected games in both countries should be the same, in order to provide a reliable comparison

The sample of 40 (20 from Brazil and 20 from the UK) advergames was the representative sample of this this systematic search. There were at least 240 games featured in the popular list of games; however, the number of advergames is not high. Thus, the sample of 40 (20 from Brazil and 20 from the UK) advergames was the representative sample of this this systematic search.

### 5.2. Procedure and coding categories

For the coding procedure, we utilised elements like customisation, game genre, game purpose and game outcome [25], together with curiosity (the way the content is presented to the player [33]); telepresence (levels of media intensity [37]);, control and manipulation of the game, measured by the ability to choose the difficulty [55], character/team and levels [56] and skip content [55]. These

elements are part of the *Interface* and *Advergame* sections in the CAKE framework (see Figure 1).

From the brand perspective (*Brand representations*), our proposition for brand integration followed two concepts: brand fit [34] and brand congruity [24,57]. Brand fit is the integration between a sponsored brand and the game, which could happen at five levels: emotional fit (the player influences the game world), symbolic (gameplay is associated with the story), playstoric (storytelling elements are mixed with the gameplay extension), entity (interaction with characters or brand) and label (brand name or logo) [34]. Brand fit is very similar to the concept of game-product congruity, as it analyses the connection between the game and the brand. This association can be measured at three levels: associative (association with the brand), illustrative (interaction with the product) and demonstrative (gameplay and narrative shows features of the product) [24,57].

The message measured the purpose of the advergame [25] and brand strategies (e.g. brand awareness), measured by level of brand identifiers and the purpose of the brand [58] (*Theme*). The existence of a brand-related story inside the advergame was also coded in this category.

From the mobile platform perspective we borrowed the concepts of pervasive games, translated by three expansions: spatial (occur in many locations at the same time), temporal (actions are embedded to everyday life) and social (people are game elements) [59] (*External factors*).

For the cultural category, translation and adaptation of content were analysed, following the principles of *culturalisation* [3] and the cultural layer of the CAKE framework (*Cultural representations* (see Figure 1)).

Finally, we separated our codes into five aspects: the brand, the game, pervasiveness (e.g. spatial, temporal and social dimensions), the message (e.g. purpose of the advergame) and culture (see Appendix A, Table A.1).

## 5.3 Results and analysis

Brand category was one main influencer in advergame design across cultures. Overall, the advergames were very similar. The main differences were the brand category and integration, advergame theme, advergame genre, localisation and social media integration.

### 5.3.1. Brand category and integration

In the UK, 27.5% of the advergames have been used to promote food brands, whereas the Brazilian sample featured entertainment brands. Overall, the products featured were low-involvement products (e.g. food or entertainment). The integration of the brand and the game followed the perspectives of the brand category. For the Brazilian sample, 50% had playstoric brand fit, but this was also related to the fact that most of the Brazilian advergames featured entertainment brands.

### 5.3.2. Advergame theme

Considering the thematic story, results show that advergames can be related to punctual events. One example is the advergame *Vem Ser Brasil*, from the Brazilian soft drink brand *Guaraná*, which focused the interface design, sound effects, gameplay and story on the World Cup 2014. The thematic of the game could be one main strategy to “localise” the advergame and bring it closer to the consumer’s context. There was no translation of this advergame to other languages.

### 5.3.3. Advergame genre

Adventure was the most utilised genre in mobile advergames in both samples (57.5%). This could be related to the amount of advergames that featured entertainment brands (50%). 15% of the advergames had the gameplay very similar to “popular” games. Games like *Temple Run*<sup>\*</sup>, had their mechanics “adapted” into advergames in both samples. This adaptation occurred in the level of visual interface design, which reinforces interface adaptation as one key design strategy. However, no difference was found across cultures.

### 5.3.4. Localisation

Only 20% of the Brazilian advergames were originally in Brazilian Portuguese, such as *Guaraná*, *Vem ser Brasil*<sup>†</sup>. 80% of the Brazilian sample was originally in the English language. This could be related to the localisation of the brand (local brand) or the brand's target public. 42.5% of the games were translated. Translated content was the alternative utilised by marketers to provide content in the international market. This shows that adaptation of textual content according to a culture is still a design practice. The localised elements were the game title, translated buttons and textual information.

### 5.3.5. Social media integration

60% of the Brazilian advergames had integration with social media. The integrated elements could be a button to share the game with friends and the ability to connect to a social network (e.g. *Facebook*). The UK sample had only 20% of social integration. This suggests that the opinion of the others and social status might influence more Brazilians rather than British, reinforcing cultural perspectives from Hofstede [22] and Aaker and Maheswaran [16].

## 6. Interviews

The objective of the interviews was to further explore the elements from the content analysis and to understand players’ preferences and attitudes towards advergames. The interviews were conducted through a semi-structured approach in English and Brazilian Portuguese. In order to assure the quality of this study, a researcher fluent in both Brazilian Portuguese and English evaluated the translation of the transcriptions. The same researcher was a second

\* <http://imangistudios.com/index.html>

† <https://www.guaranaantarctica.com.br/vemserbrasil>

coder and evaluated three samples of codes and transcriptions in both languages.

A thematic analysis was conducted through the coding procedure followed the components of the CAKE framework and the questions asked in the interview, represented by three aspects: (1) the identification of the advergames elements (e.g. interface design, mechanics, storyline, context and content), including their level of importance; (2) the themes that could be related to effectiveness, such as motivation to play and attitudes towards advergames; and (3) attitudes towards localisation, which is related to cross-cultural HCI and the results of the content analysis of advergames.

## 6.1. Participants

22 game players from both countries were interviewed (12 Brazilians, 5 female, 7 male and 10 British, 5 female, 5 male). The sample was composed of participants from 18 to 35 years old, with different gaming experiences. The average age of the participants was 26 years old. The motive for this number is related to the necessity to saturate the data and discover useful patterns. The reason for that 12 is the average desired number of participants in order to achieve homogeneity, if the goal is to describe a shared belief or meaning [60]. For the selection of our participants, we respected the average age of game players from both countries; the age group that represents the Brazilian gamer is between 25-35 years old [61] and for British game players the average is between 25-45 years old [62]. We have chosen a convenience sampling approach [63], inviting participants through *Facebook* groups composed of gamers from both countries.

## 6.2. Findings and analysis

The findings showed some cross-cultural differences regarding the expectations of consumer behaviour and advergame design, separated in six themes: attitudes towards advergames, motivation to play advergames, viral marketing, localisation, contextual information and simplicity (see Table 4).

### 6.2.1. Attitudes towards advergames

There was a mixture of negative and positive attitudes towards advergames. Brazilians were more positive than the British. This could be related to a significant growth in the Brazilian gaming market, as mentioned by a Brazilian participant “the generation that is growing today is more involved with games”. For British respondents, advergames need to be changed and should “have a solid game behind it to have more people interested in playing”. This could be because the gaming culture is quite mature in the UK [64].

### 6.2.2. Motivation to play advergames

For Brazilians, the game elements that might influence them to play advergames are interface design, message,

challenges and social factors. Conversely, British preferred a structured gameplay, with clear goals and rewards. A social component, such as sharing achievements with friends or completing missions together, was also mentioned by Brazilians as a motivational factor. British also thought social media was important, but it might not work for everyone. This means that a more segmented approach is important.

### 6.2.3. Viral marketing

Brazilians said that their motivation to play the advergame is because it is already something that is popular even being “good or bad” advertising. This also shows that the influence of “others” is important for Brazilians, which reinforces Aaker and Maheswaran's [16] arguments about cultural orientation and persuasion. Moreover, in Brazil, curiosity combined with popularity could motivate players in advergames. British respondents also mentioned virality as one motivator, but with less enthusiasm than Brazilians. Thus, this could be related to two aspects: one the nature of advergame, which tends to be viral and two, a cultural preference towards others' opinions.

### 6.2.4. Localisation

The perceptions about localisation from Brazilians respondents were specifically related to the language translation. “Not all Brazilians speak English” – said a Brazilian respondent. Hence, translation could be crucial for advergame effectiveness. Conversely, for British players, advertisers should bring the advergame theme “closer to the player's lifestyle”. This shows a very individualistic side of British consumers since it raised a discussion around personalisation of gameplay. Also, according to a British player, differentiating gameplay according to a culture could not be effective, as different versions of the same game could evoke preferences for one version or the other. Brazilians also mentioned that if the mechanics are changed, “you change everything”. This means that changes in the mechanics should be carefully treated as a design strategy.

### 6.2.5. Contextual information: familiarity, metaphors and popular culture

The relationship with familiarity and metaphors was representative in the interviews of both samples. Aspects that were related to it were viral messages and popular culture, particularly for respondents in Brazil. Perhaps this could be related to a high level of collectivist values (e.g. others' opinions) and uncertainty avoidance (e.g. preference of familiar elements) of Brazilians. For Brazilians, this could be conveyed by the utilisation of a strong narrative structure, becoming “more familiar” and “memorable”. This could be related to the high contextual level of Brazilians as a culture. Familiarity was one aspect not only related to the theme of the advergame but also to the game mechanics. The adaptation of the game mechanics to match the rules of popular games was mentioned as one effective strategy to make the advergame “familiar” to the target public. For British, the associations

should fit the individual’s lifestyle (see Table 4). This consideration of lifestyle could also be related to brand familiarity. This means that for British consumers, brand familiarity could have a stronger impact in their attitudes, rather than familiarity with viral messages.

**6.2.6. Simplicity**

Simplicity or ease of use was a theme that appeared in different ways from both samples. In fact, perceptions about ease of use are moderated by cultural preferences [39]. For Brazilians respondents, simplicity comes along with a game with “simple” storyline, mechanics and interface. According to them, the storyline needs to be short, the interface needs to be usable and intuitive and the mechanics needs to be direct. For the respondents in the UK, simplicity was mainly related to gameplay, including winning incentives and rewards. This could be a result of British being lower in context than Brazilians. Values such as mastery and autonomy [21] also support this phenomenon. British respondents valued strategies that could make the advergaming more “addictive”. Reasons for that could be the influence of British practical ways of thinking.

Table 4 Comparison between themes emerged from interviews according to Brazilian and British respondents

Themes	Brazil	UK
Attitudes towards advergaming	“I see a convergence between advertising and games and the generation that grew up with games is in the workplace (since the 80s and the new generations). It’s like a combination of interests. I see it with good eyes.” – 007-BRA-25-M	“I’m not sure if they will do it properly, to be honest we need more people to research it and not use it for what it is right now, developing it to the point where it can really benefit both the user and the brand” – 002-ENG-28-M
Motivations to play advergaming	“I think that a very interesting and creative interface, with the aim of something educational and entertainment would attract me. It needs to have a relevant challenge and a good experience. Or thematic challenges.” – 006-BRA-30-F	“I play games more because of the story. If there is not a story really connected I don’t stay attached. However, it has to look nice.” 007-ENG-34-M “The balance between the competency and the challenge: those two things are very

	“I think that the biggest strategy of the advertisement using games is the character design and the creative ideas.” 003-BRA-21-M “I think social media is one element that is very important for advertisements in Brazil.” 003-BRA-21-M “You have to make your game viral. People play the game because it’s viral, whether good or bad. They download it because they are curious, because it’s popular.” 004-BRA-30-M	important for me as a gamer because if it’s too hard after a while I wear down and if it’s too easy I will get bored”- 002-ENG-28-M
Localisation	“You need to consider where you will implement this identification, the adaptation. If you change the mechanics, you will change many things. You might change it to hard or easy and this could interfere in people’s emotions or how people are feeling regarding the game.” 004-BRA-30-M	“Maybe if a couple of my friends are playing maybe I would play too or something like that. I think that social media integration is very important at that point.” 004-ENG-25-M “Characters and story are the two main things that should be very culturally aware.” 005-ENG-27-M “That raises another question. People would say that some versions of the game are better in other places... Differentiating gameplay for example could not be effective.” 004-ENG-25-M
Contextual information	“They (the advergaming) have a mechanic of a game that has a good rating in the Apple Store and they’ve adapted it very well.” 007-BRA-25-M “You need to see what is the success of the moment. You can escape. If you create something that appeals to popular taste, it is guaranteed (that you will have success)” 012-BRA-34-M	“If there is some kind of cultural attachment it now becomes a part of your lifestyle so it has a more lasting effect.”– 002-ENG-28-M

Simplicity	“You need to make something intuitive through touch, you might need a context that could involve the user quickly, and a game that could be solved faster, through levels or short chapters.” 007-BRA-25-M	“So, you can’t just make a simple game and keep it. I think it has to be addictive.” 010-ENG-24-M
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Brazilians, there is a tendency to favour contextual and “known” communications; this supports not only Hall’s dimensions [18], but also Hofstede’s [22] dimensions of uncertainty avoidance. Moreover, British respondents showed more “knowledge” about games, rather than the Brazilians. This is possible since the video game culture in the UK started before Brazil [64], which could have promoted a higher level of game familiarity. Familiarity also emerged during our study in three ways: familiarity with the game genre and game characteristics (e.g. popular games and level of game knowledge/familiarity), familiarity with the theme and story of the advergame (e.g. advergame featuring The World Cup) and brand familiarity (e.g. related to brand representations and brand category). This level of familiarity has not been mentioned in cross-cultural advergame design before and could be explored with more depth in the future. Also, our framework might be useful for practitioners and researchers in order to explore the concept of familiarity when analysing and designing advergames across cultures.

Other contributions from the CAKE framework are related to cultural dimensions. The framework was utilised together with cultural dimensions to inform and analyse cross-cultural advergame design and consumer behaviour. The CAKE framework showed that dimensions like collectivist-individualism [22] are essential in advergame design. For example, Brazilians were more motivated to play advergames based on social influences (e.g. family and friends). This could be a key element to consider while designing advergames for collectivist groups.

The CAKE framework has brought some revealing insights into the study of advergames across cultures, particularly for Brazil and the UK such as:

- Brazilians preferred advergames that feature familiar and popular themes, reinforcing the notion that Brazilians operate in a high-context cultural dimension [18] and in a high level of uncertainty avoidance [22]
- British preferred advergames that have more creative game mechanics and challenges, reinforcing their sense of autonomy, mastery [21] and individualism, characteristics noted by Hofstede [22]
- Brazilians valued advergames with social media integration, supporting their collectivist cultural dimension [22]; Brazilian advergames also had that social media functionalities
- Brazilian advergames did not present a high- power distance characteristic (e.g. rules, and high number of levels); Brazilians did not value leaderboards or competition, which did not reflect an expected power distance dimension [22]. Thus, Brazil and UK were similar for this cultural feature.

## 7. Discussion

### 7.1. Theoretical and practical contributions

The incorporation of local themes in Brazilian advergames (e.g. World Cup 2014) and its reflection in the interview with consumers showed that when considering advergame design, Brazil is a high context culture. This aspect has not been discussed in previous research and could represent a significant finding in terms of Hall’s [18] cultural dimensions applied in advergame design. If considering aspects of localisation, the majority of the Brazilian advergames were translated from English to Brazilian Portuguese. This supports cross-cultural HCI theories [3,40,41], suggesting that the content should be translated and culturally adapted. However, the only feature that was changed was the language (e.g. translation of buttons). This shows that the adaptation was partial, since other characteristics like visual elements, character design and colour scheme could have been adapted. Character ethnicity could be an important element to be changed culturally [3]. This indicates that there are still unexplored opportunities for studies that investigate cultural adaptability of advergame design.

British consumers showed negative attitudes towards advergames, which can be related to a negative attitude towards advertising in general. One explanation could be the level of Persuasion Knowledge Model (PKM) [45]. Thus, it is possible that the CAKE framework helped to detect the influence of culture in PKM. However, further studies could investigate this relationship with more depth.

Another theoretical contribution is the indication of the influence of cultural preferences towards advergame design elements. Brazilian consumers preferred appealing visual interfaces, whereas British consumers preferred structured game mechanics. This supported Hall’s [18] high-low context dimension and Schwartz’s [21] cultural dimensions of mastery and autonomy for British and harmony for Brazilians (see Table 1). Brazilians also preferred advergames that were related to something that could be familiar for them or viral, which showed that for

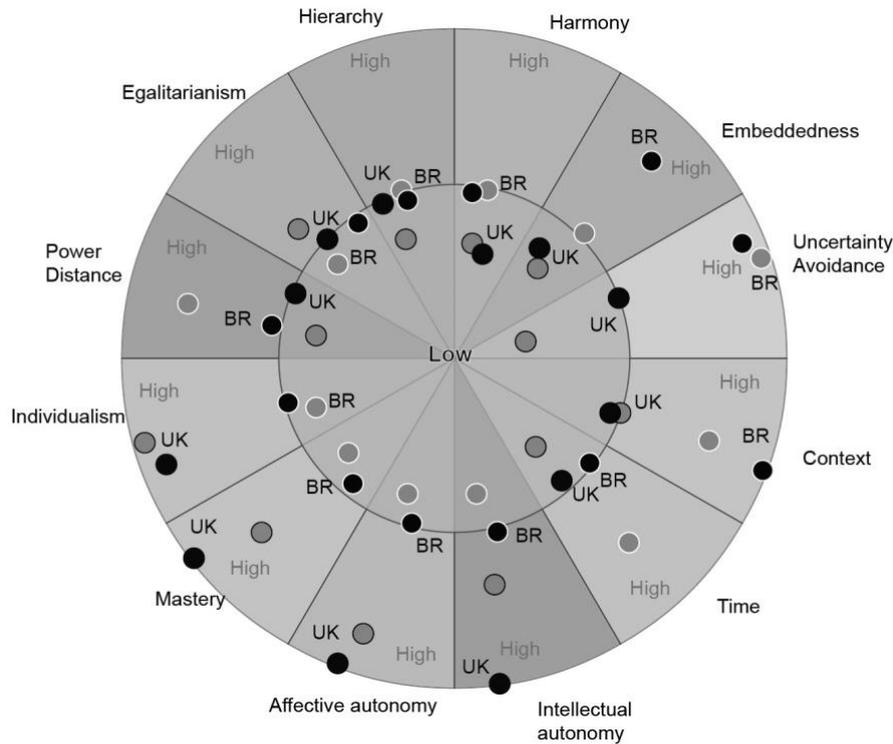


Figure 2 Cultural map after the study, comparing Brazilian and British cultural dimensions (grey dots: before the study; black dots: after the study)

- Brazilian consumers valued advergaming that were already viral, featuring elements present in popular culture and group norms, reinforcing their cultural characteristic of embeddedness (e.g. preference of traditional themes, similar to uncertainty avoidance) [21]

Those insights have been distilled into a map of advergaming design elements that influence cross-cultural consumer behaviour and the different relationships that players/consumers have with the advergaming. This is illustrated in Figure 2, which shows a shift of cultural dimensions of Brazil and the UK (see the change from grey dots to black dots) in the context of the influence of advergaming design in consumer behaviour.

The current paper gives a contribution to the field of games design and research since: (1) it compares Brazil to the UK, bringing an overview of Hofstede’s [22], Hall’s [18] and Schwartz [21] dimensions; (2) the study brings the concepts of ease of use, familiarity with viral themes, familiarity with game mechanics, previous gameplay experience, brand familiarity and attitudes towards advertising as important aspects in cross-cultural advergaming research; and (3) the study presents and introduces a cultural framework (CAKE) that addresses the influences of advergaming design in cross-cultural consumer behaviour in a holistic way.

## 8. Conclusion

In this paper we proposed a cross-cultural perspective to analyse advergaming design elements. We compared and contrasted the design elements of advergaming of two different cultures: Brazil and the UK. We put forward the CAKE framework as a tool to analyse cultural nuances in advergaming design and influences in consumer behaviour. The CAKE framework represents the integration of advergaming design, consumer behaviour and culture, suggesting that advergaming design elements could be integrated with cultural aspects for a more successful experience. Accordingly, advergaming design elements, such as: the visual interface, the rules of the game, the brand message, game context and game narrative, are significant components for advergaming design. We further suggest five significant factors for consideration when analysing the relationship between advergaming and cross-cultural consumer behaviour, when comparing Brazil and the UK. These are: attitudes towards advertising, brand familiarity, previous game experience, game familiarity and the level of simplicity of the advergaming.

The main limitation of this work is that a larger sample size of both people and advergaming from Brazil and the UK would help to expand the findings. However, we

expect that our data on the prevalence of the CAKE framework and the significant factors of advergame design will be useful for future studies on the relationship between advergames, cross-cultural HCI and cross-cultural consumer behaviour.

## Appendix A.

Table A 1 Results from the content analysis

Advergame features	How the element is presented in the game	Total percentage BR (N=20)	Total percentage UK (N=20)
<b>Game Structure</b>			
Goals, points and rewards	Collect points	25%	40%
	Unlock content	10%	30%
	Both	65%	30%
Genre	Car racing	10%	5%
	Sports	15%	5%
	Adventure	55%	60%
	Simulation	10%	10%
	Shooter	5%	10%
	Puzzle	5%	5%
	Arcade	0%	5%
<b>Interface</b>			
Customisation	Choose difficulty	15%	25%
	No customisation	85%	75%
Manipulation	Player can Skip content	15%	15%
	Choose character or team	20%	10%
	Choose level	25%	35%
	All	15%	0%
	No manipulation		
Surprise, curiosity and novelty		80%	80%
Telepresence		90%	90%
<b>Context</b>			
Spatial		0%	5%
Temporal		5%	15%
Social		60%	20%
<b>Aspects of the Brand</b>			
Congruity/Integration and/or Brand Fit	Associative/Label	5%	15%
		0%	0%
	Illustrative/Entity	10%	0%
		5%	40%
	Demonstrative		
	Associative and Illustrative	5%	15%
		50%	25%
	Associative and	15%	5%
		0%	0%
	Demonstrative Playstoric		
Symbolic			
Emotional			

Brand category			
Airlines	0%	10%	
Apparel	0%	5%	
Car	0%	5%	
Celebrities	5%	0%	
Food	20%	35%	
Government	0%	5%	
Movies	40%	10%	
Music	0%	15%	
Sport	5%	0%	
Tourism	5%	0%	
Toys	5%	0%	
TV Show	15%	15%	

Aspects of the Message			
Purpose	Awareness	20%	45%
	Sustainability, well-being	0%	0%
	Tradition	80%	45%
	Entertainment	0%	5%
	Safety		
Story	Brand-related	60%	45%
	Non-brand related	15%	40%
		25%	45%
	No story		
Aspects of Localisation			
Content/Language	Translated	80%	5%
	Specific	20%	95%

## Appendix B.

Table B 1 Advergames list\*

Brazil	UK
Barbie Fashion Design Maker	Adidas Golf: Adizero
Ben 10: Omniverse	Alien Ride
Brasil na Copa	Survival Run with Bear
Brasil Quest	Grylls
Capitão América	Cool Cubes
CSI: Hidden Crimes	Doctor Who 2
Frozen Free Fall	Dumb Ways to Die
Treinador Guaraná	Fanta Fruit Slam
Antarctica	Gorillaz - Escape to Plastic Beach
Hobbit: King. of Middle-earth	Gravity: Don't let go
Homem de Ferro 3	Inception: Mobile Architect
A Era do Gelo: Vilarejo	Kellogg's Man of Steel
Kim Kardashian	Aviation Empire
Mais Divertido Nestlé	Made in Chelsea
Meu Malvado Favorito	Nestle Chocapic
NFL Mobile	Optathlon
OREO: Twist, Lick, Dunk	Peugeot Pocket Racing
Thor: The Dark World	PolyFauna
LWP	Star Rescue
Top Gear: Race the Stig	Crabs & Penguins
Velozes e Furiosos 6	Toblerone Crunchy
Vem ser Brasil – Guaraná	

\* Gathered from iTunes store from each country during October-November 2014

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