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Design

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A framework for cross-cultural advergame design: a comparison between Brazil and the UK

by

Vanissa Wanick Vieira

Thesis for the degree of Doctor of Philosophy in Design

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<u>ABSTRACT</u>

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A FRAMEWORK FOR CROSS-CULTURAL ADVERGAME DESIGN: A COMPARISON BETWEEN BRAZIL AND THE UK

Vanissa Wanick Vieira

Digital innovation is moving the marketing industry forward. With new technologies, there is a shift from consumer attention to consumer engagement, in which advergames play a huge part. Advergames are games built around a persuasive message, often related to a brand. However, there is a lack of research about the influence of advergame design across cultures.

Brazil and the UK are two cultures that have a large participation in the gaming market. Differences and similarities related to advertisement perception, attitudes and interface design could give insights about the influence of advergame design in consumer behaviour.

This research proposes a framework, using concepts from theories about cross-cultural HCI, cross-cultural consumer behaviour and advergame effectiveness. The framework was evaluated and validated through a comparison between Brazil and the UK, considering advergame design elements and consumers' perceptions.

The results suggest that advergame design can influence and embed cross-cultural consumer behaviour. Finally, the current research could help to guide advertisers and game designers that expect to enter different cultural markets, and influence people's perceptions towards a particular brand.

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The advergame created for this thesis at:

http://do-doc-ahedron.co.uk/research/br/onossocafezinho/ and

http://do-doc-ahedron.co.uk/research/uk/onossocafezinho/

DECLARATION OF AUTHORSHIP

I, Vanissa Wanick Vieira

declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

A framework for cross-cultural advergame design: a comparison between Brazil and the UK

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. Parts of this work have been published as: [please list references below]:

Signed:

Date: 25/06/2017

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Acknowledgements

Definitions and Abbreviations

Advergame assets: advergame content, audio, visual

Advergame content: advergame mechanics, advergame assets, advergame message or theme

Advergame context: relevant advergame content

Advergame interface: digital representations, including WIMP and game world (of advergame)

Advergame mechanics: advergame rules, assets and content

Advergame narrative: story that connects the advergame content within the advergame structure

Advergame rules: the rules of the advergame that allow players to interact with the content

Advergame structure: advergame design elements that display the advergame content

Advergame theme: advergame message supported by the advergame content and context

AE: advergame effectiveness

ARG: Alternate Reality Games

AROU: arousal

ATTBa: Attitudes towards the brand *before* gameplay

ATTBb: Attitudes towards the brand *after* gameplay

CAKE: The framework for Advergaming Design across Cultures

CAKEQ: The questionnaire of the framework for Advergaming Design across Cultures

CC: Colheita de Café/Coffee Picking advergame

CEGEQ: Core elements of the Gaming Experience questionnaire

FAMI: familiarity

Game world: game environment

GAME: game experience

GAMEXP: game experience, humour and arousal

GXP: previous gameplay experience

HCI: Human-Computer Interaction

HUM: humour

IGA: In-game advertising

MDA: Mechanics, Dynamics and Aesthetics model

MMORPGs: Massively Multiplayer Online Role-Playing Games

NPCs: non-playing characters

PKM: Model of Persuasion Knowledge

UI: User interface

UX: User experience

VIRAL: virality

WIMP: windows, icons, menus and pointer

WOM: Word-of-mouth

Chapter 1:   Introduction

Globalisation and multicultural markets are changing the way services and products are designed. Among the design challenges, the implications of cultural influences form part of the discourse on issues related to Human-Computer Interaction (HCI) and cross-cultural consumer behaviour.

The consideration of culture in consumer behaviour raises questions around the way people perceive advertising messages, which induce a consumer's purchase intentions. As a matter of fact, the concern around culture and consumer behaviour has become mainstream and necessary when designing marketing and advertising campaigns (Shavitt et al. 2009).

With the emergence of new technologies, culture was not the only challenge for designers and marketers. It is possible to spot a shift from consumer attention to experience, which includes interactions within virtual worlds, social networks and videogames (Mcgonigal 2008). This gives space for strategies that involve interactive advertising to arise. One example of that is the development of the 'advergame', which is defined in the next subsection.

1.1   Defining advergames

Advergames are games built around a persuasive message (Svahn 2005). This means that the whole game is customised around the message. Advergames are not in-game advertising (IGA), another practice of advertising using games. Advergames are games created around the brand, whereas IGA is the use of product placement within games. Most research has shown the influence of advergames on particular aspects of consumer behaviour, such as attitudes towards the brand. There are not many studies, however, on the role of advergaming within a cultural paradigm (Terlutter & Capella 2013), particularly about the cultural characteristics that could be useful within the design of an advergame. Previous research has shown that members from different cultures (United States, Mexico and Peru) differ in their attitudes towards advergames (Hernandez et al. 2004). However, it is necessary to expand the logic behind different attitudes towards an advergame and its influence on consumer behaviour, particularly from a design perspective.

Advergames fall under the umbrella of persuasive games (Bogost 2007). In other words, advergames have a primary goal: to persuade consumers through a meaningful message. Advergames could be also an extension of brand entertainment (Kretchmer 2008), themselves becoming *the* advertising message. Most research considering advergames tend to classify them as persuasive tools; thus, reflecting this approach, advergames in this thesis are investigated

through the lens of persuasion. This is appropriate, as advertising is a persuasive tool that conveys rhetorical messages.

Advergaming is as a combination of two words: *advertising* and *gaming*. Thus, it is necessary to define "game" and "advertising", in order to fully understand what an advergame is. Games are considered to be activities conducted within a framework of agreed rules and goals (Lindley 2003), which enable the development of an experience (Schell 2008), situated in a context (Salen & Zimmerman 2004), which generates interpretable outcomes (Malaby 2007). Rules and goals, together with experience, define a game and if this is overlaid with a brand and communication about the brand through interaction, then advergames become strong communication tools.

Advertising lies under the umbrella of marketing communications, influencing the way consumers perceive a brand, product, service or idea (Usunier & Lee 2005), through emotional reactions (Bogost 2007). Hence, advertising is a way to communicate a particular message to consumers. As advergames encompass the word *advertising*, advergames are instruments created to communicate a particular message to consumers, usually related to a brand. Considering this, it is also necessary to define the concept of brand.

People define brands in many ways. A brand can be a name, a product connection or a combination of tangible and intangible parts into an image, therein becoming a collection of perceptions (De Chernatony & McDonald 2003). Movies could be also defined as brands (e.g. *Star Wars* could be considered as a brand (Wuts et al. 2012)). Brands can also carry culture, representing symbols or a set of values (Shavitt et al. 2009).

In this thesis, a brand is what represents a product or service, which could be a name, logo, colour, symbol and more subjective aspects like perceptions, values and associations. In this thesis, brands not only refer to "objects", like a car or a phone, but also entertainment like movies and videogames. For example, *Harry Potter* is a brand; it has its own logo, identity and values, representing the *Harry Potter* stories, which could be extended to games, movies, merchandise (e.g. T-shirts, toys, etc.) and the series of novels with the same name, story and values. Although entertainment brands such as *Harry Potter* could be expanded to different types of media (e.g. movies, websites, games, books), it is not the intent of this thesis to analyse the connectivity of these medias, but to explore the role of a game (advergame) within this range of brand communication possibilities.

Advergames, however, are not attached to a particular game platform. For example, Alternate Reality Games (ARG) like *I love bees* (42 Entertainment 2003) (online game and interactive fiction

that uses website, blogs, emails, images, sounds and digital artefacts to promote the videogame *Halo2* (Bungie Studios 2004)) (McGonigal 2008) can be considered as an advergame (Svahn 2005).

The definition proposed in this thesis is very similar to Svahn (2005, p.4): advergames are games designed to "carry a message designed to persuade the player to change a behaviour". However, the researcher made some additions to this definition in the approach she has adopted in this thesis. Although the message is designed primarily to persuade and influence a player's behaviour, the advergame (as a game) can teach, engage, motivate and provide information about a product/brand (Waiguny et al. 2012). Advergames, in the same way as games, can also be related to a wider social and cultural context (Mäyrä 2007; Salen & Zimmerman 2004) which influences player experience. Thus, the definition adopted in the current thesis is:

> *The advergame can be considered as a framework oriented by rules and goals that carries a rhetorical message, designed to persuade, engage, and influence the player's behaviour in a specific context, considering individual, social and cultural values.*

Persuasion, in the case of advergames, becomes a way to convey *procedural rhetoric*, which Bogost (2007) defined as the use of computational systems and processes to provide persuasive expressions. Svahn (2005) also states that procedural logic lies at the core of advergames.

Considering this, it is also necessary to state the position of this thesis in the terms of *procedural rhetoric*. Procedural rhetoric is defined by Bogost (2007) as the persuasive representations supported by rules and mechanics that allow user interaction within a game; he As argues that procedural rhetoric shows the influence of games in contexts such as advertising, which is mainly covered by advergames. The key criticism of procedural rhetoric is that it is not enough to address meaning in games (Sicart 2011). This perspective is partially adopted in this thesis, particularly when analysing the design of advergames and what makes advergames "persuasive". However, the current research is not only "procedural": players' perceptions were also analysed, investigated and incorporated in the process of advergame effectiveness.
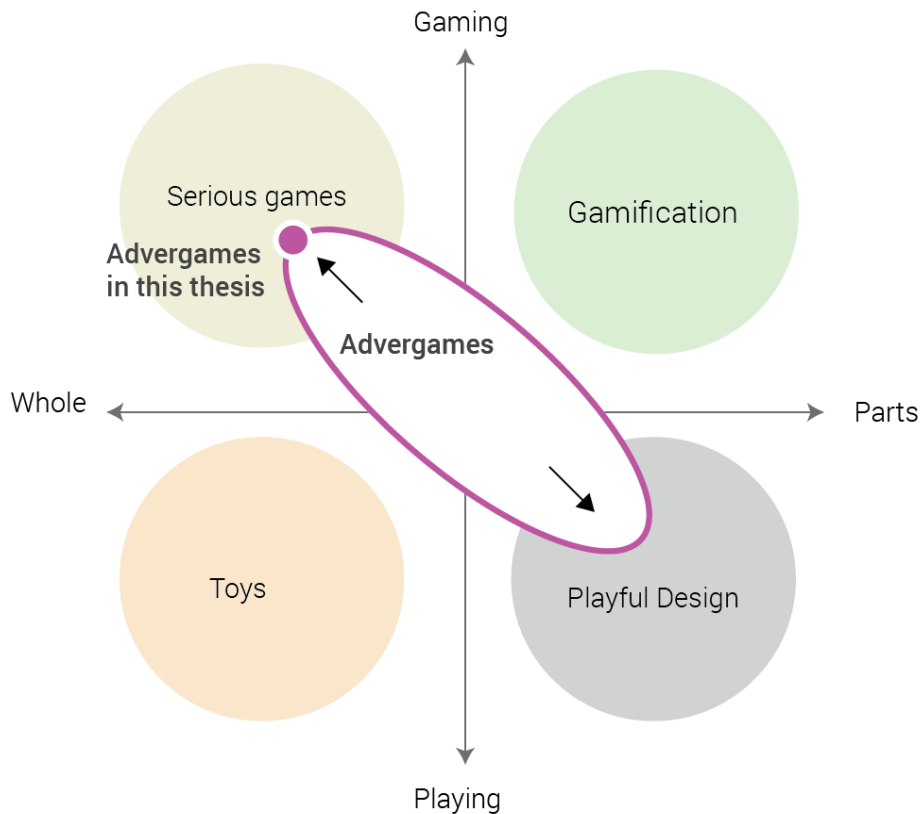
Figure 1-1 Position of this thesis considering advergames, serious games and gamification
 (adapted from Deterding et al. 2011)

Games have the power to fulfil human needs and solve real-world problems, particularly through engaging and rewarding activities (McGonigal 2011). This reflection elevates games to another level; that is, they are not just tools for entertainment but are also a source of inspiration, engagement and persuasion (Fogg 2003). This opens up the way for concepts like serious games and gamification to emerge. Thus, when classifying advergames as games with a particular purpose (e.g. advertising), it is important to situate advergames in the realm of serious games and gamification (see Figure 1-1).

Serious games are defined as interactive platforms that operate in scenarios that go beyond entertainment (Ritterfeld et al. 2009). This means that advergames could be situated between entertainment (e.g. having fun with the brand) and a particular purpose (e.g. influencing people's attitudes towards a brand).

Gamification, on the other hand, is a design process that involves play, fun and user experience (Werbach & Hunter 2012) through the application of game design elements into non-game contexts, where it is possible to find a variety of applications (Deterding et al. 2011). Gamification is a process (Werbach & Hunter 2012; Zichermann & Cunningham 2011) that can be applied within a technology, but not a technology in itself. In other words, gamification is the design of

game-like activities enhanced by one or more elements, while games are integrated systems (composed of parts/elements). Considering this, advergames are games. This thesis describes advergames as integrated systems through the lenses of games (as a whole system) that are designed to influence a particular behaviour.

1.2   Defining culture

Understanding cultural variations and similarities is crucial for effective communication and changes in behaviour. In fact, in 2013, UNESCO and the United Nations Development Programme (UNDP) published the Creative Economy Report (2013), which highlighted that only culture could promote sustainable development. The value of research within a cultural paradigm could help us to recognise cultural expressions, cultural exchanges and heritage preservation, bringing communities together.

Culture has many definitions and it shapes people's responses and preferences to computer systems and communications. Hofstede (2001) defines culture as a system of patterns that differentiates people of one group from the other. In addition, Hall (1981) argues that culture cannot exist by itself, because it is a shared construct.

In this thesis, culture is treated as a set of patterns that makes people belong to a group. Those patterns are mainly related to values, behavioural traits and psychological thoughts, such as perceptions and attitudes, that will guide and influence people's decisions and consumer behaviour. Considering that, the group in question is related to nation or country.

Cultural values influence consumer behaviour, particularly regarding purchase intentions and attitudes towards brands (Usunier & Lee 2005). The challenge for advertisers and designers is to build relevant and effective pieces of communication for consumers across cultures. In this scenario, Design becomes the alternative to provide cross-cultural experiences while respecting people's values and expectations, according to their cultural norms and symbols.

Culture can be defined as shared habits and meanings, interpreted within a context (Usunier & Lee 2005). This is consistent with Hodge and Kress (1988) who argued that context is a crucial part of the system's meanings. For example, the red colour of the traffic light does not mean "stop", but "motorists, stop" – which reflects the relationship between context and function. The difference between context and culture is that culture is more related to norms, values and conventions, whereas context helps people to interpret a message.

Context can be also a reflection of society. For example, Papanek (1985) argued that the process of design involves method (interaction of tools), use, need (economic, psychological, spiritual,

technological and intellectual needs), Telesis (content reflects nature and society, fitting into human socio-economic order), association (psychological aspect), and aesthetic satisfaction. The premises proposed by Papanek (1985) have a crucial value for the design practice as it reinforces that design does not occur in a vacuum. In terms of advergame design, it could suggest that the advergame content could in fact reproduce cultural values.

In this thesis, context was utilised as a way to situate and guide the current research across cultures. The next subsection explains the main rationale and focus of this thesis, underlining the research conjecture, research questions and the chosen cultural context.

1.3 Thesis rationale and focus

The focus of this thesis is on the understanding of advergame design in terms of cross-cultural consumer behaviour. Current research in advergaming design is concerned with issues of advertising effectiveness, enhanced by the integration between the game and the brand, psychological responses and behavioural answers (Terlutter & Capella 2013). However, there is a lack of research in the incorporation of those elements in a cultural setting. Considering this, it was possible to identify a few opportunities, such as:

- Lack of a framework that integrates principles of cross-cultural advergaming design and cross-cultural consumer behaviour
- Lack of metrics of advergaming design across cultures
- Lack of instruments that could help to map the influence of cultural preferences in advergaming effectiveness
- Lack of studies that underline the influence of advergaming design in cross-cultural consumer behaviour

These opportunities guided and indicated the focus and justification for the approach of this thesis, including the research conjecture and research questions.

1.3.1 Research conjecture

Previous research in advergames indicated that the integration between the brand and the game and general attitudes towards advertising are some of the reasons why people from different cultures could react differently towards advergames (Hernandez et al. 2004). Such integration suggests that the manipulation of elements within the advergame could influence consumer behaviour. The other aspect is related to the consumer as a player, interacting with the advergame. Considering all those aspects, there is an opportunity to design a framework that could integrate advergame design and consumer behaviour in a more holistic way.

In marketing communications, cultural values can be reflected and represented through symbols, heroes and rituals (Luna & Gupta 2001). Hence, cultural dimensions could be used as guidelines to understand how people from different cultures behave in specific situations. However, in the case of advergames, what is the best way to understand this relationship? Do the same principles employed in Human-Computer Interaction (HCI) and advertising across cultures work for advergaming design? If so, what are the best practices?

In HCI, there are similar principles guiding culture and design. For example, culture influences interface design (Marcus & Gould 2000). This infers that interactive systems not only influence people differently, but they also reflect cultural values. Based on that, it is possible to define the research conjecture thus:

> *Advergames influence and embed cross-cultural consumer behaviour.*

Following Salen and Zimmerman's (2004) inference that games can incorporate culture and influence culture at the same time, the "*embeddedness*" reflects the ability of the advergame to incorporate cross-cultural values.

In this thesis, a research "conjecture" refers to a supposition relating to a thought (*advergames influence and embed cross-cultural consumer behaviour*) that could be true (or not) and requires further investigation and information.

The main argument behind this conjecture is that design and culture intermingle in the development of general games and advergames. In the case of advergames, the integration of the brand within the game can affect different perceptions across cultures (Hernandez et al. 2004). This suggests that the actual advergame design could influence people from different cultural backgrounds. However, at the same time, the advergame itself would incorporate cultural elements, regarding its representativeness. The challenge, however, is to map the design aspects within advergames that could influence people across cultures.

The verb "embed", argued in the conjecture, suggests an incorporation of design elements that belong to a particular culture. The idea is that games (and advergames) do not only influence people across cultures differently – they also embody those differences.

The conjecture is, therefore, a reflection of the combination and integration of two approaches: the influence of advergames in cross-cultural consumer behaviour and the embeddedness of cross-cultural consumer behaviour in advergames.

As a reflection of the conjecture, it was necessary to address the key elements and review the main theories related to cross-cultural advergame design and cross-cultural consumer behaviour.

In order to conduct this review, it was necessary to understand and clarify the main research question that guided this thesis. The research questions are introduced in the next subsection.

1.3.2   Research question

The research question followed the proposition exposed by the research conjecture argued in the previous section. The main elements of the research conjecture involve the "influence" and "embeddedness" of advergame design and cross-cultural consumer behaviour. In other words, the conjecture highlights the relation between the design of advergames and consumer behaviour across cultures.

Considering this, the main research question that guided the literature review and the propositions of this research is: *What are the dimensions and components of the framework that integrates cross-cultural advergaming design and cross-cultural consumer behaviour?*

In this thesis, the word "framework" is treated as a conceptual framework, designed in order to organise ideas, concepts and propositions related to the research conjecture. In other words, in this thesis, a framework is an abstract representation of models, theories and beliefs supported by the literature review and guided by the research conjecture.

1.3.2.1   *RQ1: What are the dimensions and components of the framework that integrates cross-cultural advergaming design and cross-cultural consumer behaviour?*

The idea behind the development of a "framework" was to identify and integrate the main elements that could help to highlight and address the research conjecture.

In this thesis, the conceptual framework was initially described as a holistic and general framework that emerged from the literature review. Thus, in order to address RQ1, it was necessary to ground the conceptual framework through a cross-cultural comparison. In this case, the chosen cultures were Brazil and the UK. The next section introduces this approach.

1.3.3   Brazil and the UK as research contexts

In this thesis, introducing a context to the RQ1 was crucial in order to ground the propositions from the research conjecture. In this section, a brief context is highlighted, arguing for the comparison between Brazil and the UK.

Latin America has a very significant digital market, with 43% of the revenue coming from mobile games, and Brazil is one of the largest countries in this market with 35% of the game segment (Newzoo 2014). With the emergence of the games industry in Brazil and the investments in

advertising in Latin America, there is an opportunity to study the impact of advergaming within the context of the Brazilian market and culture.

Furthermore, Latin America has been in transition, particularly enhanced by changes in the political settings, moving towards a liberal democracy (Lugo et al. 2002). Those transformations influence the cultural environment and adoption of new media, such as videogames. Moreover, one important element to be taken into account is that Latin America is not a uniform region. Brazil, for example, is one region by itself (Lugo et al. 2002).

In Brazil, the first videogame was an Atari game which appeared around the 1980s (Alves 2015); however, it was not produced in Brazil. The first game produced in Brazilian territory was a game called *Amazônia* (Micro Sistemas 1983), which featured adventures in the Amazon jungle, solving problems around the Rainforest (Alves 2015). Compared to the UK, to date, the Brazilian game industry has experienced timid growth. The UK is one of the largest markets of videogames, with 63million game players according to Donovan (2015). For example, the first British computer games were created during the 1940s and 1960s and the gaming industry continues to explore technological variations (Donovan 2015).

Brazil and the UK are the two countries that could prove most useful in offering insights into advergaming design across cultures. If considering the main cultural dimensions applied to interactive systems, Brazil and the UK differ significantly in aspects related to concepts of hierarchy of information and complexity. Moreover, if considering cross-cultural advertising, Brazilians tend to favour contextual themes, due to their high-contextual level of communication (i.e. implicit information and gestures). Yet, the comparison between those cultures has not been extensively explored in advertising, consumer behaviour, design or games. Therefore, this approach could extend the studies of those fields, benefiting both Brazilian and British markets.

The choice of Brazil and the UK is also convenient for the researcher. The author has connections in both countries, being Brazilian by birth, and having lived in the UK for three years, since the beginning of this research.

Another aspect to consider is the scope of research addressing cross-cultural consumer behaviour. The key constructs of studies that deal with cross-cultural comparisons are individualism and collectivism (Shavitt et al. 2009). Countries that are usually compared are from Eastern and Western nations. This reveals a lack of research in cross-cultural studies involving Latin American countries (Okazaki & Mueller 2007).

Following the key arguments above, the aim of the main research question for this thesis is to understand the impact of advergame design within a cross-cultural context. For that, it was

necessary to address aspects related to design, culture and cross-cultural studies. The design of the thesis is explained below (see Figure 1-2).
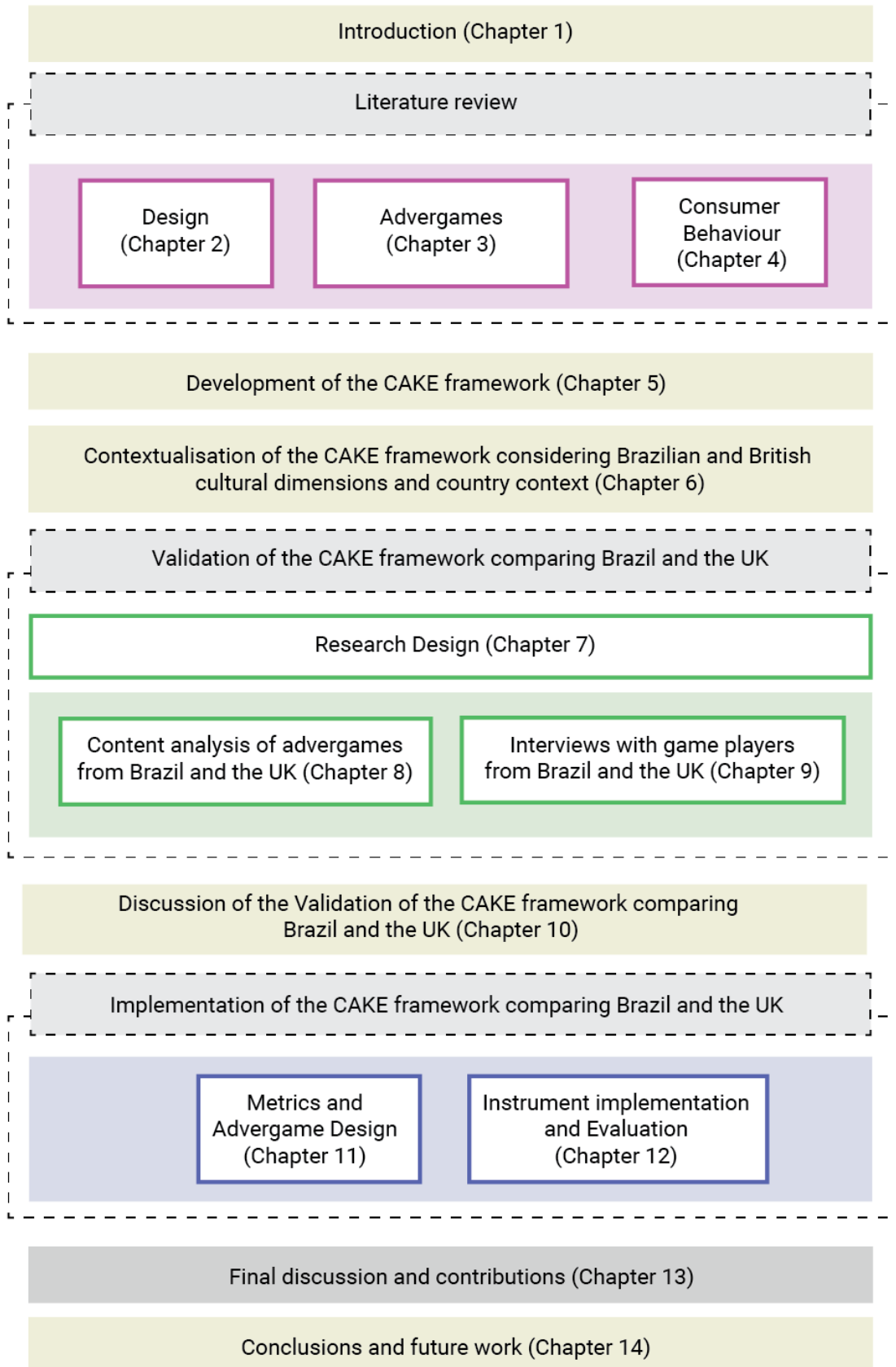
Figure 1-2 Thesis structure

1.4   Thesis structure

This thesis' structure is illustrated in Figure 1-2. The research background comprises three main areas: (1) cross-cultural game design, including cross-cultural HCI and design, (2) cross-cultural advertising, including marketing strategies across cultures, and (3) cross-cultural consumer behaviour. A critical review was undertaken in those three areas, composing Chapters 2, 3 and 4.

Chapter 2: addresses the main aspects of the role of experience design in marketing and advertising, combined with theories that involve Human-Computer Interaction (HCI). Chapter 2 also discusses the effect of culture in design, marketing and HCI, giving an overall picture about cultural influences.

Chapter 3: outlines the main elements and research literature in advergaming design and consumer behaviour, including attitudes towards the game and the brand, aspects of advergame interface design, advergame mechanics, advergame context and advergame content.

Chapter 4: discusses cultural elements such as symbols, rituals and heroes, evoked by the role of cultural values in marketing actions. Arguments about the role of habits, associations and cultural norms in consumer behaviour were also introduced in order to understand the influence of familiar events and cultural dimensions in behavioural outcomes.

Chapter 5: emerged after the review addressed by Chapter 2, Chapter 3 and Chapter 4. This review guided the development of the CAKE framework, combining the role of cross-cultural design and HCI, cross-cultural consumer behaviour and game dimensions in advergames. The framework was firstly developed in a generic context. Chapter 5 also explores and explains the research question and research conjecture that guided this thesis.

Chapter 6: introduces a context for the CAKE framework. In this chapter, the CAKE framework was grounded following both Brazilian and British cultural dimensions and country contexts. Chapter 6 also discusses differences and similarities between Brazilian and British cultures through a hybrid approach of cultural dimensions.

Chapter 7: presents the choices for the methodology and the position of this thesis in the cross-cultural research paradigm (e.g. emic and etic). This chapter outlines the research strategy and describes the methods that were employed herein to validate and implement the CAKE framework, according the research questions. The selected methods are content analysis (Chapter 8:), interviews (Chapter 9:) and the case study (Chapter 11:).

Chapter 8: introduces the content analysis employed in this thesis in order to address differences and similarities between Brazilian and British advergames. This was necessary in order to validate the CAKE framework in the contexts of Brazil and the UK.

Chapter 9: describes the interviews that were conducted in order to validate the CAKE framework and explore the perceptions of British and Brazilian players towards different aspects of advergames.

Chapter 10: discusses the implications of the content analysis and interviews employed in Chapters 8 and 9 for the CAKE framework in the contexts of Brazil and the UK. In this chapter, the CAKE framework was validated in the contexts of Brazil and the UK and the components of the framework were discussed, confirmed and adapted.

Chapter 11: describes the creation of the advergame *Colheita de Café (CC),* sponsoring the *Fairtrade Mark* and strategically designed to favour Brazilians in terms of visual aspects (e.g. scenario, symbols and colours) through a semiotic approach. Chapter 11 also presents the metrics of the CAKE framework in the contexts of Brazil and the UK.

Chapter 12: is the design of a questionnaire and the implementation of this questionnaire, in order to analyse cultural preferences and the relationship between visual familiarity (e.g. advergame design strategy designed in Chapter 11:) and consumer behaviour. This was supported by the implications of the triangulation approach to the CAKE framework, discussed in Chapter 10:, which helped the researcher to adjust the CAKE framework according to Brazil and the UK. These implications influenced the creation of the CAKE scale of familiarity, which was combined with gameplay experience and consumer behaviour metrics through a questionnaire (CAKEQ). Chapter 12: also shows the development of the questionnaire and evaluation of the CAKE framework in the contexts of Brazil and the UK.

Chapter 13: presents the discussion around the research presented in this thesis as well as the contributions of this research to game designers, game researchers, and the Brazilian and British games markets. The main theories identified in the literature review are confronted and discussed in relation to the CAKE framework.

Chapter 14: discusses future work through different views: methods for advergame design across cultures through participatory approaches, expansion of the metrics for advergaming design across cultures, including aspects of neuroscience and eye tracking, and applications of advergaming design in other cultures and markets. Finally, Chapter 14: summarises the implications of this research and states its limitations.

Chapter 2: Design and culture

This chapter elaborates the factors related to design as it applies to games and cultural influences. Design is the way to understand and interpret the meaning of things, while respecting people's perceptions and experiences (Krippendorff 1989), particularly within the context of games and experience design. However, how can culture influence those approaches? What is the impact of culture in design? Design has many strands, including problem-solving strategies, in which the design choice depends on the value of the solution (Papanek 1985). This suggests that design is an activity that creates value.

The relationship between culture and design can be understood through the interpretation of values within a context. The experience that emerges from the interaction between people and products, for example, depends on the "human" characteristics, since experience is not a product feature (Desmet & Hekkert 2007). In terms of culture, Desmet and Hekkert (2007) argue that there is a link between the emotions from the interaction with the product and people's values, which are usually culturally-situated. Thus, mental codification allows people to relate experiences with values. In terms of products, this can be expressed by product attributes; however, how would this happen in terms of games? Those aspects are discussed in the next subsection.

2.1 Human-Computer Interaction and games

Games are classified as interactive systems constructed of bits and integrated processes, which normally include feedback loops and participation (Murray 2011). In other words, games are participative tools, with elements that help players navigate and explore the game world through interactive experiences. Thus, once games involve experiences, it is necessary to understand the role of design in the development of the experience itself. In games, players feel that they are in control of the interaction. This is represented by the concept of agency, as a reflection of the player's choice, freedom and commitment (Tanenbaum & Tanenbaum 2009). This aspect affords autonomy to the players, evolving according to the relationship that they have with the game.

In Human-Computer Interaction (HCI), experience design is related to the user, task and context of use, including the ability of the product/service to provide management tools, incentives and recall (Hassenzahl 2005). Figure 2-1 describes the key concepts of UX through the perspectives of the designer and the user. The model created by Hassenzahl (2005) reflects this relationship, particularly through aspects that provide user control (e.g. manipulation) and hedonic features,

which reproduce outcomes related to satisfaction, pleasure and appeal. This makes the user experience something that is subjective and that is intermediated by a context (i.e. situation).
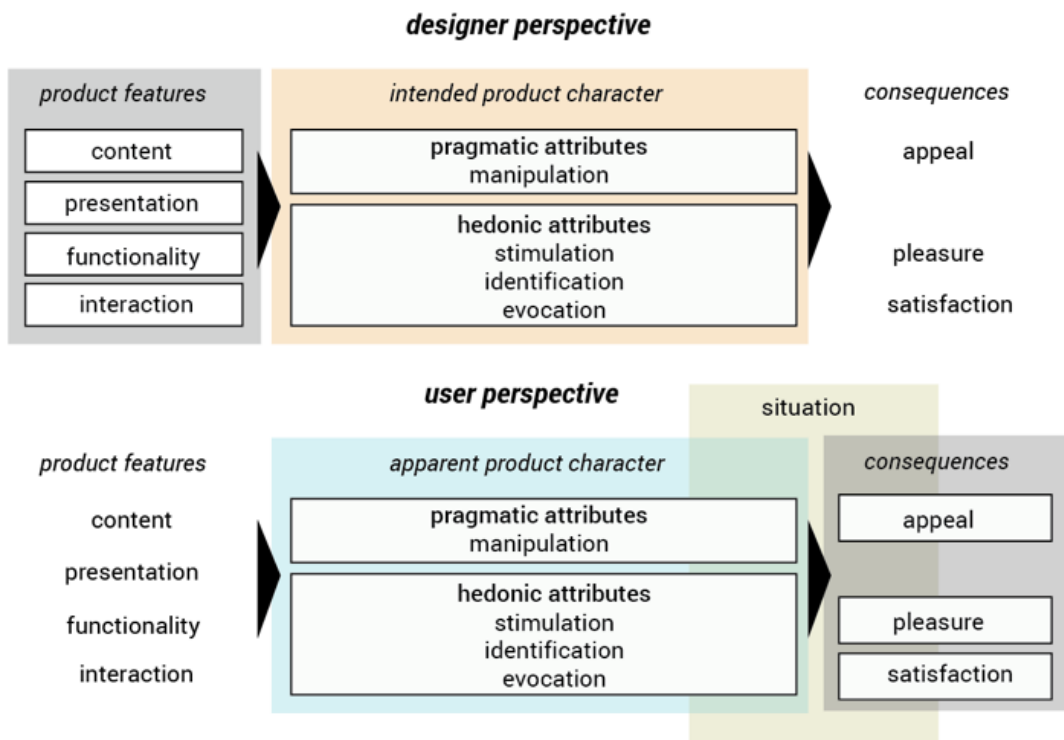
Figure 2-1 Key elements of the model of UX, considering both designer and user perspectives (adapted from Hassenzahl 2005)

User experience (UX) goes beyond usability; it is focused on personal outcomes from interactions with the application. Moreover, user experience can integrate psychological aspects, such as cognition, emotion, motivation, perception and attention, and analysis of responses, including previous memories and attitudes (Takatalo et al. 2010). This shows an important relationship between positive experiences and user behaviour.

Research in user experience design often consider aspects that represent the interplay of three approaches: non-instrumental (e.g. aesthetics, surprise, fun, intimacy, identification and stimulation), emotions (e.g. joy, fun, motivation) and experiential (e.g. related to well-being, transparent, merged with the context) (Hassenzahl & Tractinsky 2006). Thus, this indicates that in the case of game interaction, there is a relationship between emotion and experience. However, little is known in terms of cross-cultural game design and game experiences across cultures. This aspect is expanded in the next section.

2.2   Culture, games and cross-cultural games

Games and culture can be understood in two ways (Salen & Zimmerman 2004):

- Representative, as a reflection of culture, including cultural dimensions, values and ideologies or

- Transformative, as interactive systems that offer players different forms of participation

In the representative level, culture and design can be studied through the lens of cultural appropriation (Vasalou et al. 2014). Cultural appropriation in games is the result of the "recontextualisation" of a particular culture in order to suit the game's mechanics, storyline and interface by designers that are not from this culture (Vasalou et al. 2014, p.268). It is a way to incorporate cultural elements into the game. In this case, cultural elements guide the design of the game, as, for example, the appropriation of the *Day of the Dead* from Mexico and the incorporation of sugar skulls and traditional objects from the festival inside the game (Vasalou et al. 2014). By utilising this approach, the game design is built for one single culture.

Changes in game mechanics can be also employed in games across cultures. For example, group opinions and group attitudes may influence players to change their behaviour while playing a health-related persuasive game (Khaled et al. 2006). In fact, Khaled et al.'s (2006) work is centred on the polarisation individualistic-collectivist cultural dimensions proposed by Hofstede (2001) (see Chapter 4:). This may explain how "situated" mechanics inside the game could influence people in different backgrounds in health-related scenarios. The challenge, however, is to employ this in terms of advertising and marketing, which are contexts that carry different behavioural characteristics (e.g. buying products or learning something about a product/idea).

The second way to understand culture and games is by gameplay. Games are ideological systems as they reflect societal and cultural values while played (Salen & Zimmerman 2004). Moreover, the meanings created during individual gameplay experiences are nearly always enabled by context (Mäyrä 2007). This means that the game itself is a cultural representation and it is empowered by the social context and may be a way to understand differences and similarities across cultures.

Another approach is delineated by the design choices for games in a global context. In this scenario, Chakraborty and Norcio (2009) have highlighted three specific reasons for cross-cultural computer gaming studies:

- Games in different cultures can have different results
- Language is not the only aspect that differentiates cultures
- Designers should consider designing games for cross-cultural audiences

In other words, it is a way to highlight that it is important to consider localisation of games (see section 4.3.2 in Chapter 4: For example, Bernhaupt (2010) argues that the localisation phase (i.e.

the adaptation of the game to fit a market taste) is crucial for a successful game development. This aspect could be represented by the concept of *Culturalisation* in order to adapt not only the language but the game elements, including the game content (Edwards 2011). However, it is important to understand the definition of game content.

Content has an important role in the relationship between culture and games. According to Murray (2011), there is no content without form, because digital design shapes the interaction. This means that in order to present content in the digital medium, it is necessary to build a relevant and consistent form. Content in advergames can influence people from different demographic backgrounds differently; for example, female and male players have different reactions towards advergame content (Waiguny et al. 2013). However, studies regarding the representation of the content (form) for different cultures are lacking. According to Edwards (2011, p.22), "content carries culture". This suggests that content would vary across cultures. The definition of advergame content is expanded on Chapter 3.

2.3   Marketing and design

In the engagement economy, attracting the attention of the consumer is not enough (Mcgonigal 2008). For this reason, marketers and companies need to find ways build a strong and living relationship with consumers. One way to address this is through the focus on consumer experience, rather than just on marketing communication. Thus, there is a shift towards interactive marketing, which facilitates efficient communication between marketers, products/brands, consumers and the environment (Ranchhod 1998).

Combined with advances in digital technology, interactive strategies emerge in order to augment marketing communications, particularly through:

- Experiential marketing, translated through the concept of strategic experiential modules (SEMs), conveyed by sensory, affective and cognitive experiences, lifestyles and social-identity (Schmitt 1999)

- Brand experience, composed of emotions, sensory, intellectual, behavioural and affective experiences, perceived value and brand touch points (or points of contact), as a reflection of the brand as an extension of its proposition (Brakus et al. 2009)

- Customer journey, through service design and experience design (Newbery & Farnham 2013) (see Figure 2-2)

- The concept of brand equity (i.e. marketing effects related to a brand (Keller 1993)), so that customers have positive attitudes towards a brand (Keller 2001).

- Emotional and cognitive experiences around the brand, enhanced by sensory, affective, intellectual and behavioural outcomes (Brakus et al. 2009)

Awareness	Discontinue	Recycle/Renew
•Customer is aware of a brand, service or product	•The end of use	•Re-engagement

Consideration	First use
•Decision-making	•Expectations meet reality

Purchase	Ongoing use
•Decision to buy a product	•Emergence of new needs •Sharing experiences •Possible problems
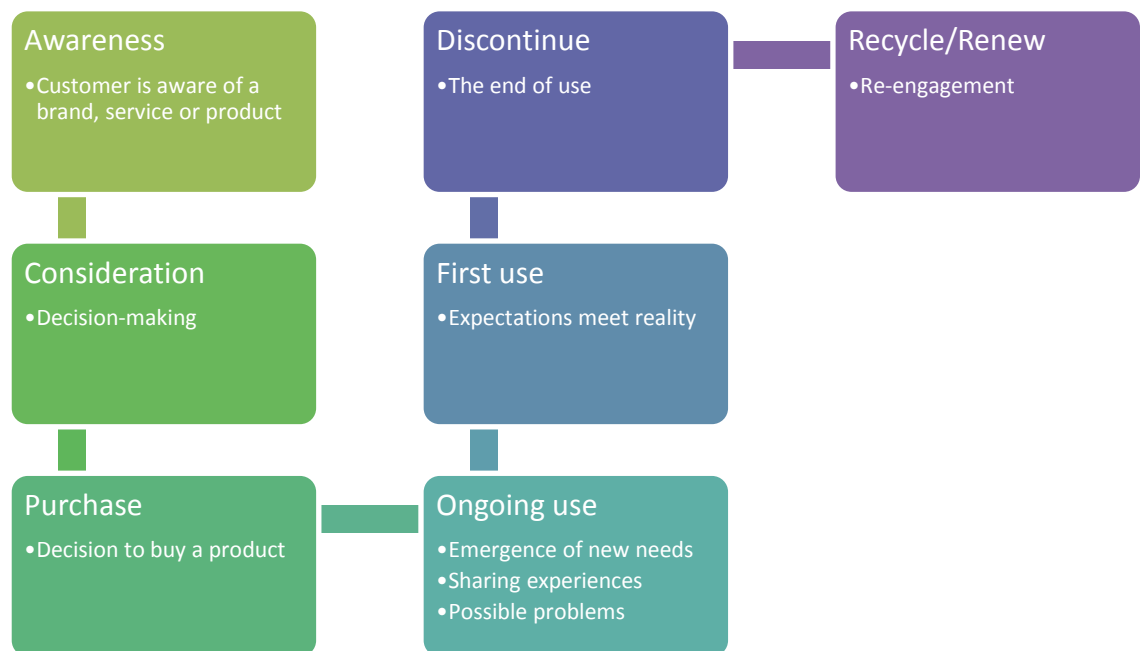
Figure 2-2 Prototypical Customer Journey Framework adapted from Newbery and Farnham (2013)

Those aspects show that experience lies at the core of marketing strategies, design and branding. Experience can be ubiquitous and part of people's memories (Hassenzahl et al. 2010), particularly through emotional associations (Zurawicki 2010). This connection can be very similar to brand associations, which include identification, strength, perceived favourability and uniqueness, all of which influence customer-based brand equity (Keller 1993). This means that once the experience is positive, it leads to repetition, recommendation and stronger brand equity. For example, Figure 2-2 shows that design could be employed in each stage of the customer's journey in order to provide a better experience for the consumer.

This journey, however, does not take place in a vacuum. For example, Schmitt (1999) argued that people from different cultures could have different levels of experiential models, which could be a result of the perceptions and acceptance of others/peers regarding people's experiences.

2.3.1   Engagement

In advertising, engagement is represented by message involvement and contextual cues (Wang 2006). The idea behind the addition of context is to bring a sense of relevance to the message and provide greater engagement.

Engagement is often defined as a connection with and relationship between a consumer and a product or service, which includes metrics such as incidence, time, the capacity to become viral, novelty, and the level of rating that people give to this relationship (Zichermann & Cunningham 2011). However, is engagement only related to time and repetition? Engagement can also be emotional, physical, intellectual, and spiritual and therefore can influence purchase repetition and positive WOM (van Doorn et al. 2010; Zomerdijk & Voss 2010). This could also influence other behavioural actions such as customer recommendations, web postings and different manifestations (van Doorn et al. 2010). Engagement also has a strong relationship with technology and user experience. For O'Brien and Toms (2008, p. 23), engagement involves challenge, aesthetic and sensory appeals (e.g. visual appearance and symmetry), feedback, novelty, interactivity, perceived control and time, awareness, motivation, interest and affect. This suggests that the way a system is designed can enhance user engagement levels.

Games have a strong relationship with engagement. For example, games can evoke feedback loops, interactivity, control and pleasure, which reflect the emotions related to engagement (O'Brien & Toms 2008). Most of the time, engagement in games can be related to the motivation to keep playing certain games. For example, people can have different incentives to play a game such as the motivation to achieve mastery or to compete with other players (Lazzaro 2004; Bateman et al. 2011). In fact, people play online games to be part of a community and to feel immersed in the game (Hsu & Lu 2004). This shows that engagement can be cyclic: people play games, feel immersed and for this reason they keep playing the game. Thus, in terms of games and advertising, it is possible that engagement is strongly related to involvement. However, how would this differ across cultures? In order to address this question, the next section discusses the features of advertising and cultural influences.

2.4   Advertising

Advertising has become increasingly ubiquitous, considering the amount of exposure advertisements now have and the transformation of the medium into the message, extending its reach into all domains of social interaction (Beasley & Danesi 2002). This can include actions in mobile phones through mobile marketing, enhancing engagement and viral effects (Sharma et al. 2008), and the use of videogames.

Videogames have become a popular alternative to bring those extra dimensions to brand to communication. Compared to TV stimuli, for example, videogames can enhance brand recognition, proving that interactivity can also make people more aware of a brand (Hernandez &

Chapa 2010). This shows that games are powerful tools for marketers and advertisers. However, what makes games more effective than other stimuli?

Conversations about the future of advertising should take into account interactions of people with human emotion through context, content and environment (Searls 2012). Considering this, the message needs to be relevant to people. Once consumers perceive advertising as something that requires tolerance, it loses meaning (Searls 2012). It is the same as saying that people see advertisements as punishments.

The key to understand the main objective of advergames is, therefore, the thin line between entertainment and persuasion. That is, for example, the case of the brand *Oreo*. There is an advergame about the biscuit *Oreo* (*Oreo: Twist, Lick, Dunk* (PikPok 2014)), in which the player interacts with the biscuit, clicking and dumping the biscuit in milk in a kitchen. If the player is having fun, how can she/he know the persuasive message behind the game? This is due to the ability of the person to identify the persuasive content and then accept this persuasive attempt.

In 1994, Friestad and Wright introduced the Model of Persuasion Knowledge (PKM), which explains that when a message is identified as persuasive, the cognitive process is different when the consumer is not aware of the attempt at persuasion. Thus, the goal of the advertiser is to lower this consumer resistance.

Another way to understand persuasion is through the Elaboration Likelihood Model of Persuasion (ELM). Created by Petty and Cacioppo (1986), the ELM deals with two routes of persuasion: central and peripheral. The central route requires more cognitive actions whereas the peripheral one is more indirect and requires levels of emotional attachment and message attractiveness (Petty & Cacioppo 1986). This also suggests that consumer resistance is still a challenge for advertisers. At this point, conventional rhetoric does not seem very powerful and a different approach is required.

Rhetoric is a theory related to a message that aims to influence a specific public (Scott 1994). In advertising, rhetoric could be also related to the representation of the concept, combined with the design of visual elements (Scott 1994). This means that in advertising, the visual aspect has a rhetoric intention behind the message. Once this message is communicated through specific channels and while respecting intention, arrangement and deliverables, people might feel persuaded by the advertisements (Scott 1994).

The discussion about persuasion and rhetorical messages could be amplified. Once advergames are considered as interactive computing systems that can change people's attitudes and behaviours, they may be considered as a form of persuasive technology (Fogg 2003). The

intentional action of persuasion is related to three factors; these are motivation, ability to perform the task, and cues to action (Fogg 2009). This suggests that the message needs to carry the information to make people perform the action. However, what about the motivation to perform such action? In different cultures, this may vary. In cross-cultural studies, particularly in Eastern and Western cultures, the motivational process differs: for interdependent (collective) cultures, social features would be more relevant and motivating; for independent (individualistic) cultures, aspects of agency and expression of internal needs would be more significant (Markus & Kitayama 1991).

The biggest challenge for marketers is to therefore present the appropriate and relevant information for the consumers, respecting their expectations and cultural norms. Thus, it is possible that this information could be different, according to the target public. This aspect is discussed in the next subsection.

2.4.1   Cross-cultural advertising

There are a few reasons to expect different responses to advertising in different cultures (Orth et al. 2007):

- Different marketing traditions
- Different advertising appeals
- Effects of messages may vary according to contextual effects
- Culture influences the process of persuasion in general and emotional patterns

The main dilemma of advertising in different cultures is the choice of whether to create a standard or a localised strategy, considering the local habits and consumers' motives (de Mooij & Hofstede 2011). Advertising is totally influenced by culture, as it is composed of language and images (and technologies) (Usunier & Lee 2005).

Previous research in cross-cultural advertising discovered that advertising generates different emotions (Aaker & Williams 1998) in Central European and other countries, influencing brand-related cognitions, attitudes toward advertising, and attitudes toward the brand (Orth et al. 2007; Pelsmacker & Geuens 1998). Consistently, cognition and emotion differ between Eastern and Western cultures, in which emotions are ego-focused or other-focused (Markus & Kitayama 1991).

Cultural values should be considered as effective elements in advertising across cultures (Okazaki & Mueller 2007), as values construct the consumer's personality (de Mooij & Hofstede 2010). For

this reason, the consideration of cultural values is crucial for cross-cultural investigations of consumer behaviour.

Research in cross-cultural studies in advertising often includes cultural orientation, attitudes (Aaker & Maheswaran 1997) and communication styles (Hermeking 2006) (see Figure 2-3). For example, in the US, advertising via television has less informative content (e.g. information about the product, including price and quality) and more entertaining features if compared to television advertising in other countries (Usunier & Lee 2005). However, this might be linked to the nature of the advertising medium. If considering print advertising, the US had more informative content, if compared to other countries (Usunier & Lee 2005).
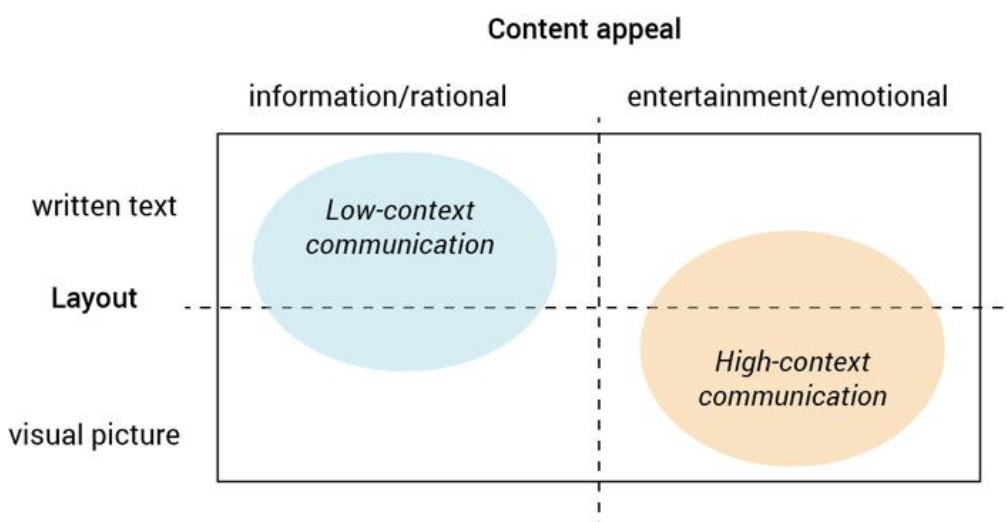
Figure 2-3 The relationship between creative strategy and communication styles (adapted from Hermeking 2006)

As stated by Hermeking (2006), high-context communication styles tend to follow pictorial and visual representations, if compared to low-context communication approaches. Low-context communication styles focus more on written text and an advertising message highlights the information from the product directly (Hermeking 2006). This shows that the way the advertising is designed is crucial for effective communication across cultures. Thus, it is possible that the principles described and employed by advertising in general could be applied to advergames across cultures.

2.5   Summary

Culture and Design create meaning in the society. Theories of Design tend to incorporate the user in the centre of the process, particularly through user participation. This aspect brings to the literature the discourse on Human-Computer Interaction (HCI). As games are interactive systems, they fit HCI studies; for this reason, concepts like localisation could be borrowed for the current

study, in order to understand cross-cultural issues in advergames. In addition, studies that involve cognition, motivation and emotions are incorporated by HCI through User Experience Design (UX). Further, games are considered as cultural practices, as they incorporate culture and can help to build culture at the same time, particularly through social play.

In the case of marketing, a few aspects can be identified:

- Brand experience depends on interactions and touch-points, and should be in accordance with brand positioning

- Experiences with brands are related to brand associations and engagement

- Engagement is more than numbers: it is the way people relate to and interact with a brand or product

- Advergames could enhance attention to the brand and build engaging relationships, as games are natural engaging tools

- Advertising is a crucial point for building intentions to purchase. However, it is necessary to review the way marketers are trying to influence consumers

- Cross-cultural advertising has the challenge to understand the different impressions that people have about the message

These factors presented the way in which interactions should take place in order to build effective consumer experience, considering people's cultural backgrounds and advertising strategies. The next chapter explains how the design of advergames and gaming experiences could work within this context.

Chapter 3:   Advergames

This chapter situates the current literature in advergame design and consumer behaviour. The promotion of products and services has led to substantial growth in advergaming and many of the large brands are looking to incorporate gaming into the consumer experience. As the current chapter presents, most of the previous research is around brands, which situates the application of advergames for consumer attitudes towards a particular brand. The next sections address the relationship among advergame design, game experience and brands, particularly through the lens of games design.

3.1   Advergames and brands

According to Bogost (2007), one of the first advergames was created in 1976. That was an Atari car racing game, sponsored by a brand (Datsun 280) (Dave Nutting Associates 1976)(see Figure 3-1). During the 1980s, different products and services started to use advergames as advertising strategy. The games were played in console platforms. In the 1990s, the Internet became a great part of the game's format. With games created in Flash™, it was easier to build different approaches, like simulations of experiences with products. Increasingly, the advergames were created to build brand awareness and new experiences in different platforms and scenarios.

Figure 3-1 *Datsun 280 ZZZAP*, the first videogame for advertising (screenshot from Bogost 2007) (Dave Nutting Associates 1976) and *My Pleasure Hunt 2* (online advergame) (Lowe Brindfors, B-Reel & Plan8 2012)

Due to the use of advergames to advertise brands, the game itself could be centralised around a brand message (Chen & Ringel 2001), attracting attention to interactive content through pleasurable experiences (Cauberghe & De Pelsmacker 2010). In other words, the game becomes the advertising–created around brand values and branded entertainment (Winkler & Buckner

2006). The expression of entertainment by or in conjunction with a brand appeared as a product placement strategy, particularly in TV and movies, and it is increasingly used to define branded entertainment (Lehu 2007).

Originally, advergaming represented the abandonment of traditional forms of product placement (Wise et al. 2008). However, advergames are not product placement or in-game advertising (IGA). For example, compared to IGA, advergames are usually simple and short, requiring little cognitive effort and variance in gameplay (Besharat et al. 2013). That is, in-game advertising can just be a simple advertising such as Billboards within a virtual environment, without intense interaction. Advergames are an evolved format of product placement, which means that advergames are totally customised and created around a rhetoric message with specific objectives, usually related to a brand. Examples of advergames featuring brands include the online game *My Pleasure Hunt 2* (Lowe Brindfors, B-Reel & Plan8 2012) (see Figure 3-1) , *Pepsiman* (KID 1999) for *Playstation 1* (sponsoring *Pepsi*), *Human Curling* (featuring the brand *BIC*) (Buzzman 2011) and *Fiat Uno Colour Race* for iPhone (Ovni Studios 2010) (Freitas & Patriota 2011).

Advergames can also provide ways to create metaphors around the brand. For example, in the advergame *Magnum Pleasure Hunt* (Lowe Brindfors 2011), the player is a woman wearing a brown dress and chasing pieces of chocolate around websites (including websites from other brands like *Dove* or *Spotify*; the gameplay is similar to a platformer game like *Super Mario Bros.* (Nintendo 1985), but the difference is on the assets, character, environment, purpose and length of the game and the platform. For instance, in the *Magnum Pleasure Hunt* could take around 10 minutes to complete and the players can only play the advergame online. After completing the advergame, the player receives a reward (points and the character eats a *Magnum* ice cream), which he/she can share in social media. The metaphor in this case is that *Magnum* is all about chocolate, fun and glamour. Differently from a classic entertainment videogame like *Super Mario Bros.* (Nintendo 1985)*,* advergames tend to be short and simple. However, advergames are not only characterised by their simplicity. Advergames have a different purpose. This is discussed in the next section.

It is also important to consider that some advergames are classified as casual games, characterised by ease of play, simplicity (Redondo 2012) and low levels of challenge (Mäyrä 2007). However, the act of playing a casual game does not necessarily need to lead to casual gameplay (Kultima 2009). That is, an individual can be a gamer but he/she only plays casual games. Thus, casual games are related to gameplay and difficulty levels, whereas a casual gamer can play a console game once a month, when a gamer plays a mobile game everyday. Casual gamers are not defined by the platform, but by their level of engagement with the game.

3.2   The message as the game

Once the definition of the advergame is related to a rhetoric message, it is necessary to understand the characteristics of the message itself, as previous research has analysed the advergame as being *the* message (Chen & Ringel, 2001; Shelton & Gross 2010). Although definitions are related to a brand message, it is important to highlight that the advergame can be used for different types of advertising. Thus, what makes the message from advergames different from the message of a game is: (1) the brand, (2) the commercial intent and (3) the advergame content.

Food products sponsor many advergames and some of the analysed content is considered unhealthy (Moore & Rideout 2007; Lee et al. 2009). This offers an opportunity for marketers to build advergames that promote healthy eating, combined with social marketing purposes (Dias & Agante 2011). Thus, if the message is relevant and informative, it could have a positive impact on people's lives. In fact, information literacy in advertising is a crucial influencer in decision making (Ariely 2000; De Chernatony & McDonald 2003). Particularly, Ariely (2000) has argued that the consumer should have control of the information flow. Therefore, if the advergame provides a sense control over the content, people might feel more persuaded.

Advergames can also include characteristics of learnability. Studies found that children could learn about food products or brands while playing the games (Cicchirillo & Lin 2011). This relationship extends the discourse on the impact of the advergame in behaviour and cognition (see Figure 3-2).
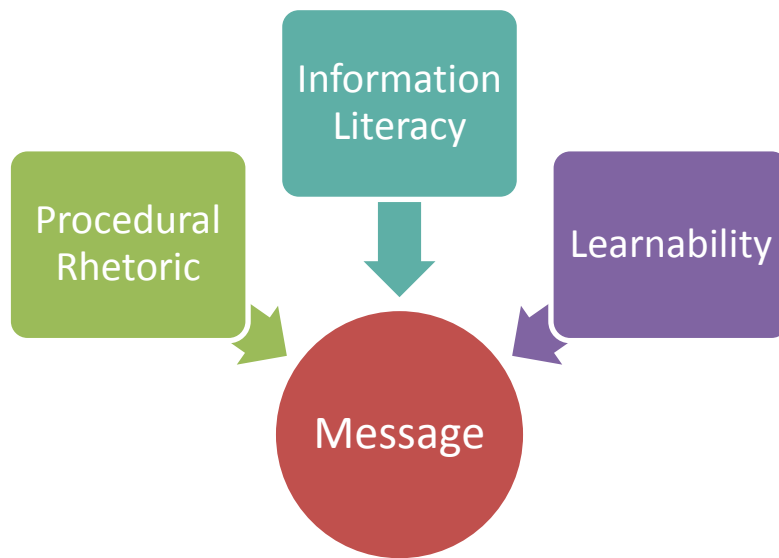
Figure 3-2 The figure represents the relationship of the advertising message with learnability (Cicchirillo & Lin 2011), information literacy (Ariely 2000) and procedural rhetoric (Bogost 2007; Shelton & Gross 2010)

Games are powerful tools for education, particularly because they are driven by choices and problem solving, where the player can learn by doing (Gee 2010). The difference between advergames and games for education can be the content (e.g. advertising x education), the brand integration and the main purpose of the game. Thus, information access and the possibility to learn about a product could be important outcomes of an advergame, which could precede any decision, be it buying a product or recommending it to others. The next section discusses the aim of the advergame and the relationship between advergames and consumer behaviour.

3.3   The aim of the advergame

Entertainment has originally been the key aim of advergames (Okazaki & Yagüe 2012; Wise et al. 2008; Deal 2005). That is, through the advergames, consumers could have fun with the brand. Considering the consumer experience and the commercial nature of the message, advergames can offer entertainment and an emotional connection between the game, the brand and the consumer (Dahl et al. 2009), blurring the line between entertainment and persuasion (Grigorovici & Constantin 2004).

Previous research has highlighted that brand beliefs, attitudes and the choice of a brand have been positive influenced if the advergame was perceived as an entertaining experience (Gurău 2008; Waiguny et al. 2012). However, as stated above, advergames are persuasive games (Bogost

2007); in that case, the persuasive message itself might influence an action. The aim of the advergame becomes the advertising strategy itself (Bogost 2007).

In the case of brands, for example, advergames could be effective tools to build brand awareness and brand associations (Shelton & Gross 2010). Other studies have found that advergames are effective tools for brand recognition or recall (Nelson 2002) and purchase intentions (Nelson et al. 2004).

Advergames may prove a suitable tool for building engaging relationships between people and brands, services, products or even ideas. As games can teach, inspire and engage people (McGonigal 2011), advergames could function as strategic ways to influence consumer behaviour through engagement and entertainment.

3.4   Advergame effectiveness

Attitudes towards the advergame and the brand are usually the ways to measure effectiveness of advergaming design. This means that well-executed advergames can influence consumer behaviour. In addition, a few aspects can influence attitudes towards the brand and the advergame, such as:

- Product involvement (Lee & Youn 2008; Cauberghe & De Pelsmacker 2010; Shelton & Gross 2010)

- Flow (Johnson & Wiles 2003; Hernandez 2011)

- Brand familiarity (Winkler & Bucker 2008; Waiguny et al. 2013)

- Congruity (Lee & Youn 2008; Wise et al. 2008; Lee & Shen 2009; Shelton & Gross 2010)

- Arousal (Hernandez 2011; Bakalash & Riemer 2013)

- Brand fit (Wuts et al. 2012)

- Product-game congruity (Faber & Lee 2008; Martí-Parreño et al. 2012; Besharat et al. 2013)

3.4.1   Integration between the brand and the game

Attributes of products in games have been analysed as a relevant component of effectiveness in placements in games (Besharat et al. 2013). For example, characteristics of an energy drink may appear as a boost in a car racing game, through not only the representation of the energy drink but by what it gives to the player (e.g. energy or power), which could be a metaphor . In this situation, attributes play a central part in the perception, memory and learning that could be

applied to advergames. Furthermore, incongruence could induce negative attitudes towards the game and the brand; this relationship in particular is perceived as intrusive (Martí-Parreño et al. 2012).

Congruency can also influence advertising recall: congruent advertisements are remembered as they are related to brand schemas, and incongruent advertisements tend to be prominent; hence people can recall them (congruent advertisements) quicker (Faber & Lee 2008).

Curiously, in product placements in games, the aspect of the "secondary task" may compromise the effectiveness of a brand message (Faber & Lee 2008). In other words, the game would attract more attention than the message. Thus, in advergames, the level of integration between the message and the game may represent this idea.

The idea of congruity and integration between brands and the game was expanded to the construct of brand interactivity, which is related to control and manipulation of the brand in the game and was proven to impact purchase intentions (Lee et al. 2013). Brand interactivity is the concept that focuses on the level of brand integration with strong participation, manipulation and customisation of the branded content (Winkler & Buckner 2006). This concept is very similar to game-product congruity and/or thematic relevance (Chen & Ringel 2001; Lee & Youn 2008).

3.4.1.1 Brand Fit and Brand Congruity

Brand fit is a concept that represents the integration between a core brand (sponsored brand) and the game extension that could take place over five levels as (Wuts et al. 2012):
  (1) Emotional fit (the player influences the game world); as the highest level of integration
  (2) Symbolic (gameplay is associated with the story)
  (3) Playstoric (storytelling elements are mixed with the gameplay extension)
  (4) Entity (interaction with characters or brand)
  (5) Label (brand name or logo); as the lowest level of integration

Considering extensions of movies or products that contain stories, congruency could function as brand fit. This concept represents the integration between a core brand (sponsored brand) and the game extension that may take place over five levels as "emotional, symbolic, playstoric, entity and label", where label fit is the lowest level of integration and emotional is the highest (Wuts et al. 2012). Brand fit is also very similar to the concept of game-product congruity, as it analyses the connection between the game and the brand. Table 3-1 illustrates the definitions of each brand integration level in advergame design.

The integration of the brand in the advergame has been investigated at three levels: associative (association with the brand), illustrative (interaction with the product) and demonstrative (gameplay and narrative show features of the product) (Bogost 2007; Cauberghe & Pelsmacker 2010). Associative, illustrative and demonstrative integrations may be combined in a mixed way (e.g. a car racing game featuring a car brand with the brand logo on the car) (Svahn 2005).

There are some similarities between brand congruity and brand fit. For example, label fit functions as an associative integration, in which the logo of the brand functions as a signature. Entity fit is also very similar to the illustrative integration, which represents the interaction with the product, environments and characters, thereby reflecting the brand. In the coding sheet, brand fit and brand congruity were combined in order to categorise the brand integrations.

Table 3-1 Definitions for levels of integration between the brand and the game

Integration between the brand and the game	Definition, based on Svahn (2005), Bogost (2007), Cauberghe and Pelsmacker (2010) and Wuts et al. (2012)
Associative/Label	Lowest level of integration; the logo is apparent and in the background
Illustrative/Entity	Players can interact with the product; represented in only one element in the game
Demonstrative	Gameplay and narrative show features and benefits of the product
Associative and illustrative	There is a logo in the background and the player can interact with the product
Associative and demonstrative	There is a logo in the background and the gameplay and narrative reflect the benefits of the product
Playstoric	Storytelling elements are mixed with the gameplay extension; the storyline is strong and relevant
Symbolic	Gameplay and aesthetics are associated with the story
Emotional	The player influences the game world; it is convincing

3.4.2   Advergame experience

As mentioned in section 3.5.2, one way to explore attitudes and advergames is through attitudes towards the game. This suggests that the actual advergame experience influences advergame effectiveness. Thus, in this scenario, it is important to understand the characteristics of gameplay experiences.

As highlighted in Chapter 2: (section 2.1), experiences have a strong relationship to emotional and affective outcomes. In games, agency is a key concept as it allows the player to make choices in the game and to have control over his/her actions (Tanenbaum & Tanenbaum 2009). This suggests that the experience while playing a game is very personal. Calvillo-Gámez et al. (2010) presented a model (CEGE) in order to address video game experiences; this has proved useful for

understanding gaming experiences from two aspects: enjoyment and control. In their model, different aspects, such as time, aesthetics value and previous experiences, may facilitate the sense of control; however, these aspects are subjective. The only element that could be manipulated by the designer is the video game, represented by gameplay (e.g. scenario and rules) and environment (e.g. graphics and sound). Thus, this means that changes in the game could also make a difference.

3.4.3 Flow

As described by Csikszentmihalyi (1998), flow happens when people feel that they are involved in one action, which includes four components: control, attention, curiosity and intrinsic interest. In the case of websites, it has been shown that flow is related to skill and control, challenges and arousal and focused attention (Novak & Hoffman 1996), suggesting that interactivity and, therefore, telepresence was one antecedent of flow (see Figure 3-3).

In games, flow is represented by the combination of challenge and performance regarding the player's skills (Bizzocchi et al. 2011). This suggests that flow is a way to achieve a balance in the game, thus promoting a more positive gameplay experience to the player.
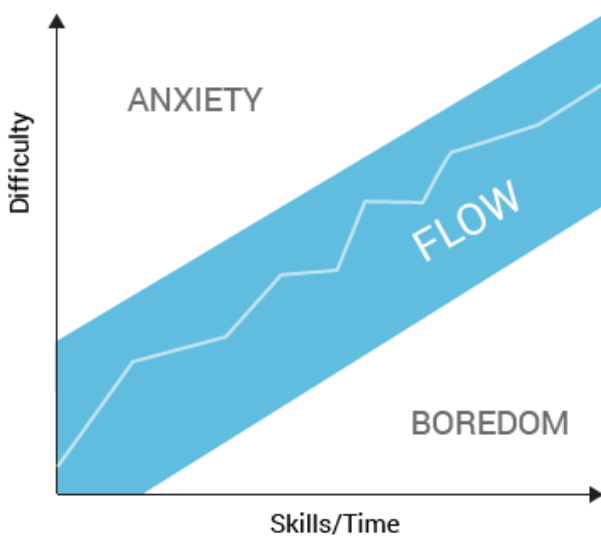
Figure 3-3 The Flow Theory (Csikszentmihalyi 1998), represented by the balance between skills/time and difficulty

Considering the acceptance of online games Hsu and Lu (2004) found that social factors and flow influenced intention to act/play, which means that a congruent game balance is necessary to develop targeted behaviours.

Previous research has found a relationship between advergames and flow, in which flow experiences generated positive attitudes towards the game itself (Johnson & Wiles 2003; Hernandez 2011; Waiguny et al. 2012). Consistent with Novak and Hoffman (1996), telepresence, challenges and skills could influence flow experiences in advergames (Hernandez 2011). Telepresence is a mediated environment or experience, present in interactive environments (Grigorovici & Constantin 2004; Sukoco & Wu 2011), which means that telepresence is related to technological features of the game (graphics, audio, visual). This means that the way the advergame is designed (including graphics and challenges) should be considered as an important factor in advergame effectiveness.

3.4.4   Arousal

Arousal could be related to emotional attempts, memory (Bakalash & Riemer 2013; Hernandez & Minor 2011) and brand attitudes (Grigorovici & Constantin 2004). This strong connection between both emotions and arousal is consistent with the idea of emotional design, where sensual appeal seems to be more effective (Norman 2002). Moreover, it is suggested that arousal is related to the aspect of curiosity that will in turn shape immersive experiences in games (Qin et al. 2009). In addition, arousal can improve the individual's information processing, meaning that it is connected to attention, elaboration and social cognition (Bakalash & Riemer 2013). Therefore, as arousal is related to curiosity, the advergames that may increase consumers' interest are more likely to be effective. However, it is still necessary to understand how to build this link.

3.5   Advergame design elements

In the study of advergames, most of the research focuses on consumer attitudes; there is only limited literature on the understanding of the game design principles that evoke such attitudes. In this section, the literature gathered in terms of advergame elements was borrowed from game design elements in general. Briefly, the advergame elements are elements from *games*; adapted according to the purpose of the game (e.g. advertising) (see Table 3-2).

Salen and Zimmerman (2004) argue that three elements compose the creation of meaning by gameplay:

- Context (the environment of the gameplay)

- Structure (guidelines)

- Interpretation (how people perceive the game)

For example, guidelines could be composed of the game structure and the interface, while the context could be the gameplay environment. Another way to understand the game design guidelines is through *game elements*. For Björk and Holopainen (2006), game design elements configure the whole game and they coexist. Examples of game elements are avatars, units, cards, functions, non-playing characters (NPCs), space, game state, game information and rules.

Table 3-2 Description of game terms and elements and advergame elements

General game terms and elements	Explanation	Advergame elements
Game structure	Composed of game elements (Björk & Holopainen 2006)	**Advergame structure:** composed of advergame design elements that display the advergame content
Game mechanics	Components of the game, includes game content, rules and assets (Hunicke et al. 2004)	**Advergame mechanics:** composed of advergame rules, assets and content
Game rules	What players can do in the game; breaking them ends the game (Björk & Holopainen 2006)	**Advergame rules:** the rules of the advergame that allow players to interact with the content
Game assets	Part of game content (Hunicke et al. 2004); audio and visual (Salen & Zimmerman 2004)	**Advergame assets:** part of advergame content, audio and visual, including brand representations
Game context	Events in space and time that make information relevant (Edwards 2011)	**Advergame context:** aspects of the advergame that make the content relevant for the player; it is related to the advergame message or theme
Game content	Levels and assets (Hunicke et al. 2004)	**Advergame content:** advergame mechanics, advergame assets, advergame message or theme
Game interface	Digital representations; look and feel of the game (Björk & Holopainen 2006); composed of WIMP and game world (Jørgensen 2013)	**Advergame interface:** reflects the advergame content, composed of advergame digital representations, including WIMP and game world (of advergame)
Game narrative	Storyline, although not all games have stories (Juul 2001); Game interface can tell a story (Jenkins 2004)	**Advergame narrative:** story that connects the advergame content within the advergame structure
Game theme	Related to the combination of the topics of the game and game genre (Kultima 2008)	**Advergame theme:** related to the advergame message supported by the advergame content and context

3.5.1   Advergame structure

Considering game design models, Hunicke, Leblanc and Zubek (2004) created a framework composed of mechanics, dynamics and aesthetics (MDA), as a way to understand the interaction between the game and the player. The MDA framework (Hunicke et al. 2004) integrates

interactive points of gameplay (aesthetics), the relationship between aesthetics and mechanics (dynamics), and mechanics (such as rules, game balance and levels).

Compared to the Three Aspects of Mental Models (i.e. designer's model, user's model and system image) developed by Norman (1986; 1983), the MDA framework also describes the designer-game-player relationship.

This is consistent with the argument of Schell (2008), as games designers do not design the experience, but do design the interactive system that allows the experience to occur.

Although the MDA framework appears to be a very simple representation of game components, a few points are not clear:

- What are the elements of advergame design?

- What is the influence of culture in this scenario?

In the MDA framework, mechanics function like algorithms, possibly being more like rules and the basis of the game. That is, mechanics would be what supports the game, like a game engine that allows the game to run. The concept, though, tends to blur. Game mechanics can include points, levels, challenges, virtual spaces and leaderboards (Law et al. 2011), consistency, control, intuitive elements, customisation, status identification and balance (Desurvire & Wiberg 2009) (see Appendix B). In other words, game mechanics support the actual interaction of the game, which allows the player to experience a rewarding activity (Sicart 2008). In other words, game mechanics mediate gameplay. In the MDA framework, the mechanics function as basis of the game, followed by dynamics and then the interface design. As an analogy to an iceberg, the interface is what the player sees as a point of interaction, the dynamics are the gameplay (e.g. run, dodge objects, jump, etc.) and the mechanics are the elements that allow these interactions.

Considering heuristics for evaluation in games, Pinelle et al. (2008) also listed a number of game elements that, combined, should build a better experience; these include consistency, customisation, prediction, mapping, controls, game status, proper views, training and help and visual representations. Consistent with some elements highlighted previously (Desurvire & Wiberg 2009; Law et al. 2011), Gee (2004) emphasised that co-design, customisation, manipulation, order of problems and rules are good design principles in order to apply to games designed for learning. In addition, Qin et al. (2009) analysed game elements that could improve immersion in games, which showed how challenge and difficulty in games had a fundamental influence on the overall experience.

Comparing previous research, most of the elements related to game mechanics involve challenge (defined as a player experience (Herrewijn & Poels 2013)), difficulty (related to level condition of the game), feedback, goals, levels, well-ordered problems, and mastering.

In terms of effectiveness, it is possible that the level of difficulty could have an impact in the player experience. For example, manipulations of difficulty levels can change player experiences and influence emotional outcomes towards advertising messages (Herrewijn & Poels 2013). In fact, a sense of control of the advergame environment can influence consumer behaviour (Lee et al. 2013). Thus, it is possible that changes in the advergame structure could influence people across cultures differently.

3.5.2 Advergame context

Context can be understood in different ways as:

- The context of play within the game world
- The context of playing the game and its surroundings

By definition, context in interactive devices is the situational context, incorporating location and environment (Schmidt 2000).

Edwards (2001) argued that context is related to different aspects including social relationships, economic status, education, politics, religion, ethnicity, language and location. Consistently, Wang (2006) argued that for advertising engagement, contextual cues are crucial and should be relevant to the consumer. This suggests that gameplay behaviour does not occur in a vacuum. However, no framework integrates all those aspects.

Context in games can also appear as information necessary to progress in the game, represented through the form of maps or contextual information for the player (Squire 2006). That is, the game interface design also provides context for the player; however, this may vary according to the game.

The context of playing games (in their environmental form) can include cultural context and social context for play (that may include previous experiences) (Mäyrä 2007). This highlights the relationship between socio-cultural norms and gameplay experience. The model presented by Mäyrä (2007) is a particular way to represent contextual game experience regarding digital games production, focused on the acceptance and usage of game technology while considering social norms, values and social play. Although this model is embedded within contextual influences, it is not related to advergames. Mäyrä's (2007) reflections are of significance in illustrating how these external norms and values would influence the gameplay experience. This connects social play

and context with cultural values. The difference between context and culture in advergames is that the former is more about relevant information, surroundings and even geographic location, whereas the latter is more about values and social norms.

3.5.3   Advergame content

Studies have been undertaken regarding the content of advergames, particularly about nutritional information in food advergames (Dahl et al. 2009) and influences of negative content in brand attitudes (Waiguny et al. 2013). Content is not disconnected from technology: the digital medium has to "shape" itself according to the content (Murray 2011).

In serious games, for example, content can appear in the form of stories, in order to motivate players to solve problems (Gee 2008). It can also take one of two forms: endogenous (games that integrate form and content) or exogenous (non-integrated content) (Squire 2006). This is consistent with the concept of brand congruity in advergames and may influence attitudes towards the game (and the brand). Moreover, if the content enhances curiosity, it can attract people's attention and therefore build memorable experiences (Qin et al. 2009).

Discussions of content advertising and advergames have amplified the necessity of regulations concerning advertising content for children (Dahl et al. 2009; Lee et al. 2009; Dias & Agante 2011). Still, the definitions of game content tend to overlap. For Hunicke et al. (2004), game content comprises the levels and assets of the game, which are supported by the mechanics. Thus, it is possible that game content is the game itself. However, in terms of advertising, content might include regulations and other non-leisure messages. Therefore, in this thesis, game content is considered the main part of the advergame.

3.5.4   Advergame interface

When interacting with a game, the player is in contact to what Hunicke et al.'s (2004) call as aesthetics or, in other words, what makes the game "fun". Hence, there is a point of interaction between the player and the game that will evoke emotional feelings, such as having fun with the game. This point of interaction can also be translated through the concept of game user interface (Jørgensen 2013).

General game user interface is the combination of features and information that allow the player to interact with the game, including the game world. There are at least three ways to investigate interface design in games (see Figure 3-4) (Jørgensen 2013):

(1) Input and output mechanism (the interface allows the user to perform the interaction)

(2) Window, icon, menu and pointer (WIMP) (information in the screen)

(3) The game world interface (the game context, composed of scenarios, characters/avatars and animation)
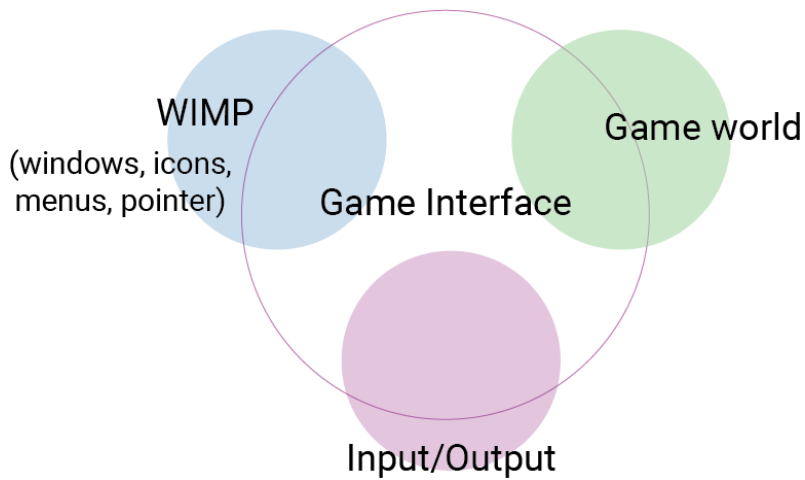
Figure 3-4 Interface levels in games, according to Jørgensen (2013)

Considering this, those three elements shape the design of the game interface, and afford an understanding of different levels of integration in the advergame interface. For example, in an advergame sponsored by a brand, this aspect could be represented by the way the brand identifiers are integrated in the advergames. By definition, logos, product images, packaging and characters compose the identifiers of a brand (Paek et al. 2014). Thus, it is possible that in terms of brand integration, WIMP elements and/or game world could be populated with elements that evoke brand associations. In fact, in advergames for brands, game components could be mixed with brand identifiers, represented by brand logo, food items, product packages and spokes-characters within the game, for example (Lee et al. 2009). Although brand identifiers may be visually and directly implemented inside the game, brand identifiers may be integrated in the form of metaphors, representing the meaning that the consumer gives to a brand/product (Kotler & Keller 2009) or points of interaction with the brand/product in the game (Nelson 2002). Yet, there is still little research on enjoyable interface design of advergames. What are the main factors that influence people's attitudes towards advergames?

After raising questions about enjoyable design elements of the interface in computer games, Malone (1982) elaborated heuristics for interface design such as challenge (goals, levels and feedback), fantasy (emotional appeal and metaphors) and curiosity (complex audio and visual effects, randomness, humour and incomplete tasks). Malone's work was the first in the area of heuristics for interface design in computer games and it has been used to guide heuristics for games that emerged in early 2000s, like the works of Pinelle et al. (2008) and Desuvire and

Wiberg (2009), who expanded Malone's principles into specific elements, particularly focused on usability principles, which are explained further in this section.

According to Malone (1982), the most important aspect in enjoyable games is fantasy, as it evokes emotional attachment and associations with familiar aspects of the system, making them pleasurable to play. That is, fantasy or metaphors provokes mental associations to players. With this, elements that induce associations tend to be key concepts in game interfaces and in the advergame interface. For example, if players can identify a brand by the metaphors and associations within the interface, it is possible that players would enjoy the advergame.

Mental images and associative content tend to mirror physical objects or other images that could induce such associations. Consistently, metaphors are a strong element of meaning, particularly in the design of multi-cultural interfaces (Salgado et al. 2009). Thus, this shows that the interface style and format in games could be a strong element when dealing with game design across cultures. In fact, the game interface could convey psychological reactions, as familiarity and intuition are elements that emerge from the interaction with interface design (Murray 2011).

Although fantasy was the most important element considered by Malone (1982) in his heuristics for enjoyable games, challenge and curiosity were other concepts that emerged in his research. Consistent with the idea of flow experience (Csikszentmihalyi 1998), challenge is also related to the concept of hard fun, defined by Lazzaro (2004) as the emotional condition of pursuing a goal. This aspect also corresponds to game design learning triggers, provided by Gee (2004), which include well-ordered problems and level of difficulty. Thus, challenge in games is the way players achieve in-game goals successfully.

The other element mentioned by Malone (1982) is curiosity. Curiosity is related to the player's attention and is consistent with six dimensions of challenge and immersion in games, developed by Qin, Rau and Salvendy (2009, p.117), which comprises empathy, challenge, concentration, control, comprehension and concentration. Thus, curiosity is about making players more immersed and engaged in the game, which could be enhanced by several elements like control, for example. As mentioned before, Malone's work was the starting point of research about enjoyable and effective interface design in games, particularly when studying usability principles in games.

Heuristics of usability and evaluation of games were defined previously by Desuvire and Wiberg (2009) and elements were consistent with earlier definitions by Gee (2004) and Malone (1982). Pinelle, Street and Hall (2008) showed that patterns for game design should also include

appropriate sensitivity, considering that games should be easy to manage and inputs should be mapped according to similar games.

Comparing previous research regarding interface elements in games, the aspects most mentioned are ability to control, consistency, cues for information, curiosity, customisation, game status, exploration, fantasy, input mapping, training and help, humour, identity, manipulation, metaphors and novelty and surprise (see Appendix B). Those aspects are composed of elements that are derived from usability principles (Pinelle et al. 2008) and others from user interface as visual design. The combination of both can help us to understand the effective elements in user interface design in games, which could be useful while researching elements that influence people's attitudes towards advergames.

3.5.5 Advergame narrative

If considering the MDA framework as a lens, game narrative is a way to see the game as a drama, through emotional interactions (Hunicke et al. 2004). Juul (2001) discussed that games and stories do not function as the same way that books and movies do, particularly because the player has a kind of "dual" role as a subject both outside the game and part of the game. Moreover, Juul (2001) believed that games could make people tell stories about them, which means that this narrative does not end in the game. However, stories in games need to be clarified. For example, the arcade game from the movie *Star Wars* is one example of a game that technically does not have a story (Juul 2001) (Figure 3-5). In this case, many elements are missing in the game. The interface does not contain the main characters and the challenges are not the same as in the movie (Juul 2001). This aspect highlights the important roles that the interface and mechanics play while telling a story. However, it is possible that the story is implicit. It could be that the name itself – Star Wars – is sufficient to evoke associations, rather than the game content.

Figure 3-5 *Star Wars* screenshot in Atari (Atari, Inc. 1983), from Juul (2001)

Jenkins (2004) argued that not all games tell stories. Instead, they are designed to build spaces and worlds that have storytelling elements, as a requirement for an "immersive narrative experience", which include aspects of interface design as an important element (Jenkins 2004). In other words, the environment tells a story that is induced by prior experiences and memories.

Thus, combining the propositions of Juul (2001) and Jenkins (2004) it is possible to conclude that:

(1) Games can provide elements for storytelling

(2) If games tell stories, they will be different from other media

(3) The design of the interface and spatial resources can tell stories in the game

(4) Stories inside and outside the game could happen not only between game-player, but through a relationship of player-players/people, not only inside the game (as MMORPGs, for example) but as elements of WOM (word-of-mouth), spreading the story of the game experience around the world

Considering the relationship between story and immersion, Qin et al. (2009) presented a way through which the storyline can evoke immersion. This includes characteristics like curiosity, capacity to concentrate in the game narrative, comprehension of story, control, challenge and empathy (high level of emotional attachment). This shows that once the game narrative is constructed through other elements like game mechanics and interface, it is possible to create immersive situations throughout the game. However, it is necessary to understand how players from different cultures perceive and understand the storyline in the advergame and how the content is expressed through the story, particularly in advergames.

3.5.6   Advergame platforms

As mentioned in section 3.1, advergames started in the Atari age and expanded towards other platforms such as web-based and mobile platforms. Previous experiences that players have with game platforms could influence the way they understand commands and interactions of the game. For example, players who play console games are more familiar with this type of platform and might be more familiar with platform conventions (Johnson & Wiles 2003). Thus, the shift from console like Atari to web and mobile platforms could be a strategy from advertisers and marketers to target gamers who do not own a game console.

Research in advergames has mainly analysed online and web-based advergames (see Appendix A). Thus, there is a lack of research in mobile advergames. Terlutter and Capella (2013) also indicated this gap as an opportunity for researchers to understand the impact of such platforms in the advergame experience.

Mobile games could be very complex since mobile applications incorporate mobile activities, social activities and game space expansion (de Souza e Silva & Sutko 2008). Moreover, location-based games enable data collection with contextual information, which is obtained by sensors (Capra et al. 2005). For example, in tourism marketing, mobile advergames can be used for information hunting and *geodashing*, using features like GPS, digital camera, maps and location data (Celtek 2010). Thus, mobile games can adapt to the player's lifestyle and can incorporate pervasive gaming elements and geo-location. That is, the gameplay incorporates mobile aspects.

This opens the discussion to pervasive games, or games that merge spatial, social and temporal elements to its mechanics. Pervasive games are mediated by technology and include games such as alternate reality games (ARG), Hybrid Reality Games (HRG) and cross-media games (Montola 2005). For example, Augmented Reality Games (ARG), can draw virtual elements into the real world using head-mounted displays, images projected in real surfaces, and hand-held devices (e.g. cameras) (Magerkurth et al. 2005).

In the light of the discussion above, Montola (2005) presented three expansions in which pervasive games occur: *Spatial*, where social play can occur in many locations at the same time, including challenges that incorporate public areas; *Temporal*, where actions from the game are interlaced and mixed with everyday life; and *Social*, where other players and other people are considered as game elements.

The spatial expansion, in that case, can be used to transform spaces according to game play. Games like *Can You See Me Now?* (CYSMN) (Blast Theory 2003) are examples of games that create new concepts of game space, building relationships between real-life and playful spaces, including a new perception of urban environments and mobility (de Souza e Silva 2008).

Considering the temporal expansion, the idea of time can be related to play sessions, like reminding the player to play the game at any time during the day (Montola 2005). Thus, in advergames, this dimension could be employed according to the player's behaviour.

Regarding the social expansion, people can become "game elements", giving opportunity to build communities and thus facilitating the communication with other people (Montola 2005). In advergames, the social dimension may help to generate an understanding of the communities around a brand and integration with social media.

With this, the consideration of the platform of the advergame also illustrates the context of play, which could be attached to the elements described in section 3.5.2 (e.g. the context of play within the game world and the context of playing the game and its surroundings).

The integration of real-world elements with the digital environment, such as mobile devices, for example, could be extremely rich for advergaming design, since brands could reach consumers in real-time. However, although this could be an opportunity, it is still not clear how the experience with different platforms would influence the experience with the advertising content embedded in the advergame.

3.6   Advergames and consumer behaviour

Advergames can shape behavioural intentions and consumer engagement with the brand (Lee et al. 2013). These aspects can be addressed through the consumer's perceptions and attitudes among other ways. Those characteristics are expanded in the next subsections.

3.6.1   Perceptions

Perceived brand differences (and values) and problem solving (the action of purchase) are related to product involvement (De Chernatony & McDonald 2003). For example, breakfast cereals are low-involvement products and cars are high-involvement products (Zaichkowsky 1986), which means that levels of involvement can vary among products. Despite that, previous research has found that consumer involvement, and therefore problem solving, can vary across cultures, particularly if a product has a social symbolic meaning (Usunier & Lee 2005). Thus, it is possible to consider that product involvement varies in two aspects: product category (or service category) and cultural meanings. This also implies that the ways people evaluate situations and make decisions varies across different cultures.

In the case of advergames, once sponsored by low-involvement products, the game could have a different purpose and could be more entertaining, as advergames for high-involvement products can be created to educate consumers about products (Lee & Youn 2008). This could be related to the difference of energy spent in decision making (and brand attitudes) in low- vs. high-involvement products (Cauberghe & Pelsmacker 2010; Shelton & Gross 2010).

Considering previous knowledge of the brand, it was found that brand familiarity impacted attitudes (Waiguny et al. 2013), which is related to the consumer's perceptions and prior evaluation of product-related experiences (Ha & Perks 2005).

3.6.2   Attitudes

Previous research in advertising has shown that beliefs are not the only determinants of brand attitudes (Mitchell 1986). It is necessary to consider how the advertising message is communicated and evaluated with the purpose of building positive brand attitudes.

Attitudes towards advertisements may be a mediator to advertising effectiveness; representing consumers' feelings and measuring brand attitudes and purchase intentions (Mackenzie et al. 1986). For this reason, as advergames are advertising in format of games, the attitudes towards the advergame could influence consumer behaviour.

There are at two types of attitude that have been evaluated in advergames featuring brands: attitudes towards the game and attitudes towards the brand. Thus, it is important to understand the relationship between both types of attitude.

Previous research has discovered that positive attitudes towards games lead to positive attitudes towards the brand (Faber & Lee 2008). A possible influencing factor for attitudes towards advergames is the level of intrusiveness (i.e. the integration of the brand in the game and time of advertising exposure) of the message (Hernandez et al. 2004). Thus, the way the message is presented has a strong influence on people's receptiveness to the advergame.

Attitudes towards advertising in general could also influence attitudes towards product placements in games. Although product placements and advergames differ in their levels of integration, this aspect is worth considering. Previous studies (Nelson et al. 2010; Winkler & Bucker 2008) found that general attitudes towards advertising may well induce attitudes towards the game.

Attitudes can be classified as explicit (cognitive) and implicit (affective), and may be subject to change by brand familiarity (Waiguny et al. 2013). This aspect illustrates the idea that previous perceptions could influence attitudes. Moreover, explicit and implicit attitudes are consistent with unconscious and conscious systems of thinking, similar to Systems 1 (emotional) and 2 (logical) from Kahneman (2012) (see Chapter 4).

Attitudes can also play an important role in consumer behaviour. Considering Fishbein and Ajzen's Theory of Reasoned Action (TRA) (1980) (see Chapter 4: for more detail), attitudes precede intentions, which can lead to further purchase behaviour or recommendations. This suggests that there is a connection between and possible consequence of attitudes towards the game and attitudes towards the brand, possibly leading to intentions and actual purchase behaviour. The challenge, however, is to fit cultural aspects inside this equation.

3.6.3 Individual, social and cultural influences

According to Terlutter and Capella's (2013) framework for the analysis of advertising and games, game features influence attitudes and consumer behaviour, which suggests that attitudes precede behavioural outcomes. In this scenario (see Figure 3-6), individual and social factors shape each step of advergame interaction. What Terlutter and Capella (2013) did not include in their framework was the influence of culture. As culture is related to social factors, cultural values might influence advergaming design and consumer behaviour in the same way as shown in their framework.
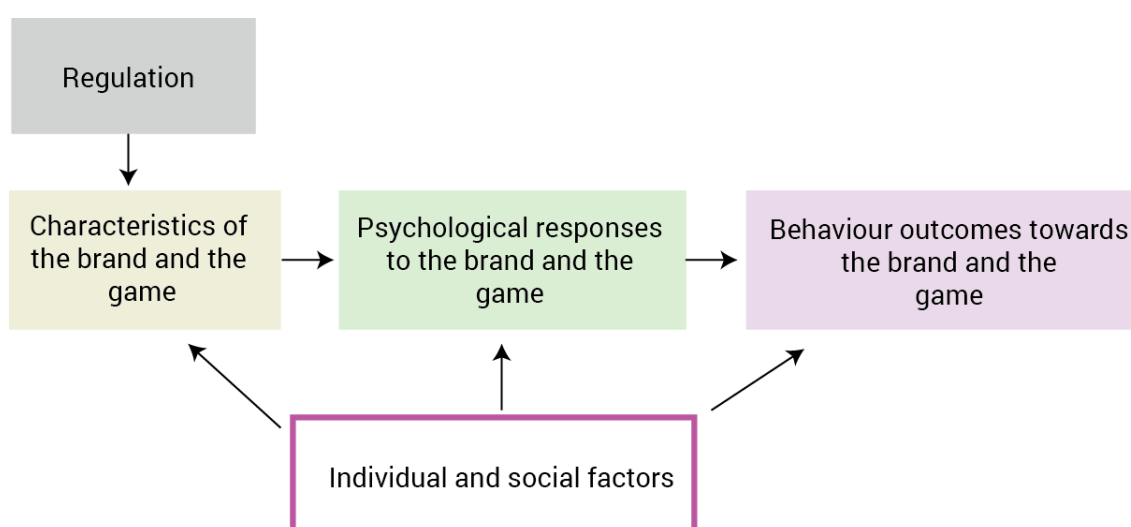
Figure 3-6 Framework for analysis of advertising in digital games adapted from Terlutter and Capella (2013)

Games may be representative (reflecting culture, including cultural dimensions, values and ideologies) or transformative (as interactive systems that offer players different forms of participation that can go beyond the game) (Salen & Zimmerman 2004). This means that games *influence* culture and *are influenced by* culture. Gameplay is one of the main areas to investigate in research in games; this approach incorporates function, experience, gameplay actions and gameplay perceptions (Björk & Holopainen 2006).

Previous research has analysed differences between responses from Hispanic and American students to advergames, where Hispanic respondents perceived the advergame as entertaining and Americans found them intrusive (Hernandez et al. 2004). This suggests that perceptions and attitudes towards advertising could vary in different cultures, which is related to the PKM model (Friestad & Wright 1994). However, two aspects need to be considered. First, if advergames are perceived as "intrusive", they are more likely to become in-game advertising (IGA), failing in aspects like integration or congruity. It is possible that the respondents of this study were evaluating the game itself, and not the message. Second, the model of evaluation of this answer

was addressed by questionnaires. Previous research has found that evaluation of emotional attempts could be better elaborated through methodologies that involve triangulation of qualitative data with quantitative data (Hernandez & Minor 2011).

In interactive environments, individual experiences can vary from one another (Murray 2011). For example, attitudes toward the brand could vary according to gender bias (Redondo 2012) and content could evoke different reactions between women and men (Yoo & Peña 2011). Moreover, players can have different motivational influences like needs and goals, which vary according to the individual (Bostan 2009).

Other aspects such as social context could influence audience reaction and consumer behaviour. For example, it may be more engaging to play with a friend than playing alone or with a stranger (Ravaja et al. 2006). Arguably, social interaction is fundamental, as players can create online communities (Kirschner et al. 2007) and enhance WOM about a brand (Tuten & Ashley 2013).

Considering different cultures, findings regarding product placements showed that there are differences in acceptability and purchase behaviour of placements in movies, including differences in the perceptions of products and individual attitudes (Gould et al. 2000). This means that the message is not always perceived as having the same meaning across cultures.

This is consistent with the idea that decision making and social actions are influenced by cultural differences, as people's attitudes and motifs are shaped by cultural context (Huang & Deng 2008).

Other aspects that could influence advergaming design are the rules and regulations of each country. Issues involving the balance between advertising and entertainment for children and teenagers are a few examples (Terlutter & Capella 2013). Thus, mapping cultural influences inside advergame design may be a way to explore perspectives, and to direct further research for policy makers.

3.7   Summary

Advergames are games that are created around a rhetoric message, designed to persuade, engage and influence the player's behaviour. However, the definition used in this research added aspects like context, time and space. In addition, as advergames incorporate a powerful message, it was necessary to understand the meaning of this message. For example, the message could be a combination of persuasion, information and learning.

When considering the use of advergames for brands, a few aspects need to be highlighted:

- Product involvement, brand familiarity and memory tend to influence players' attitudes towards the brand

- Advergames may evoke explicit and implicit attitudes towards the brand (cognitive and emotional)

- Advergames can be measured by their effectiveness; for example, product involvement, flow, brand familiarity, congruity, product-game congruity, brand fit and arousal influence this aspect

Considering the game platform, mobile advergames constitute a new field to be explored by researchers. Moreover, mobile applications can integrate pervasive dimensions of gaming.

Game structure (mechanics), context, content, interface and storyline are a few dimensions that could help researchers to understand the dimensions of game design that evoke certain aspects of gameplay. Those dimensions can compose advergame elements or the game design elements that are utilised in advergaming design purposes.

Current literature of advergaming across cultures focuses on player behaviour as players from different cultures can perceive the message differently. However, in terms of cross-cultural research and advergame design, it is possible to see a

- Lack of research that understands the influence of culture and advergame design

- Lack of research that maps the integration of the brand in the game according to particular cultures

- Lack of research that comprehends the cultural meanings that are behind advergame design

In order to build a fuller picture for advergame design it is important to understand how cultural issues may influence consumer behaviour. The next chapter concentrates on understanding consumer behaviour within this context.

Chapter 4: Consumer behaviour

This chapter presents and discusses the literature regarding consumer behaviour and decision making. Consumer behaviour is linked to the relationship between the business and the consumer, involving product attributes, emotional attachments, communication, persuasion (e.g. Advertising), and decision making (Britt 1987). Thus, consumer behaviour is about connectivity and interaction, which includes psychological and behavioural effects.

This chapter reviews behavioural models of design and the influences of external and internal elements, such as individual needs, social and cultural values, and the environment, in consumer behaviour.

4.1 Behavioural economics

Consumer decision-making is far from being a rational process (Ariely 2008). Consumer behaviour is about problem solving, including problem recognition, memory search, intention, purchase and feedback (De Chernatony & McDonald 2003). Comparing this to Ariely's (2008) concept of behavioural economics, this statement neglects the effect of irrational behaviours that are complex to predict.

This feature is consistent with Kahneman's (2012) dual-process of thinking:

(1) "System 1" that is intuitive, fast, associative, metaphorical, and automatic, with little or no effort

(2) "System 2" that is slow, complex and deliberate

"System 1" generates complex patterns of ideas and impressions that influence deliberate choices of "System 2", which then converts approved impressions into beliefs and therefore into actions (Kahneman 2012). This happens because minds in the decision-making process avoid "too much work" (Kahneman 2012). This gives space for habits and intuitive reactions to help in this procedure, based on social proof, recommendations and social norms (Wendel 2014). Thus, cultural norms and values might be part of "System 1". However, what is the relationship between those two systems of thinking and design?

In terms of product design, Norman (2002) stated that there are three crucial dimensions: *Visceral* (appearance), *Behavioural* (performance and usability) and *Reflective* (feelings, emotions and cognitions). Those dimensions are based on brain attributes, also called *Visceral* (fast, rapid, and automatic), *Behavioural* (human behaviour that could be influenced by reflective and visceral

levels of design) and *Reflective* (contemplative) (Norman 2002). Here, Norman (2002) postulates that design dimensions reflect thinking processes. This concept is very similar to that proposed by Kahneman (2012) and Ariely (2008).

The role of design in consumer behaviour can go further. Another way to understand this relationship is through the choice architecture. Thaler and Sunstein (2008) explained that in order to help people to create a better choice architecture, it is necessary to understand that: (1) people choose default actions; (2) people make mistakes; (3) well-designed systems should provide feedback to people; (4) mapping the choices can help people in their choices; (5) complex choices should be structured; and (6) incentives are very useful in terms of behaviour change.

This system, called *Nudge*, is also based on the assumption that people think in the two systems (i.e. automatic and deliberative). Governments, for example, could make use of the design of "micro nudges" to improve people's lives, replacing obligations and prohibitions with incentives or simpler choices (Thaler & Sunstein 2008).

4.1.1 Familiarity and associations

One of the most powerful principles regarding psychological cues (emotions, preferences, motivations and personality) is similarity, through which people can identify themselves with the product (Fogg 2003). This suggests that people make associations and build their preferences around familiar elements.

Visual references such as stereotypes, similar products, characters and conventions could help the user to have an association and identification with the product/brand (Crilly et al. 2004). Moreover, familiarity with aspects of systems may induce users to act in a more natural way (Evers &Day 1997).

In advertising and psychology, people tend to prefer things that are more familiar to them, just because of their level of exposure. This is termed the *Mere Exposure Effect* (Zajonc 1968). In advertising it could function in order to build implicit memory and a "perceptual fluency", making people prefer things that they already know (Grimes & Kitchen 2007 p. 195).

Another way to see implicit memory is through *Priming*. Priming is a way to build recognition of elements through associations and connections (Allbritton et al. 1995). This means that, in a piece of text, one word could link to another and therefore change its meaning. It is a way to understand biased behaviour based on textual or visual representations. Moreover, priming can be influenced by metaphors (Allbritton et al. 1995).

4.2   Individual and social factors

Consumer behaviour takes into account personality, memories, values and attitudes, including beliefs and habits (Pellemans 1971). In order to shape individual consumer behaviour, different stimuli (physical or social) could influence consumers 'perceptions, thus impacting the final purchase of a product (Pellemans 1971) (see Figure 4-1).

Considering stored information, associative memory may combine causes-effects, things-properties and things-categories (Kahneman 2012). This means that in order to build a connection with people's memories, marketers would do well to think about links that explore those relationships.
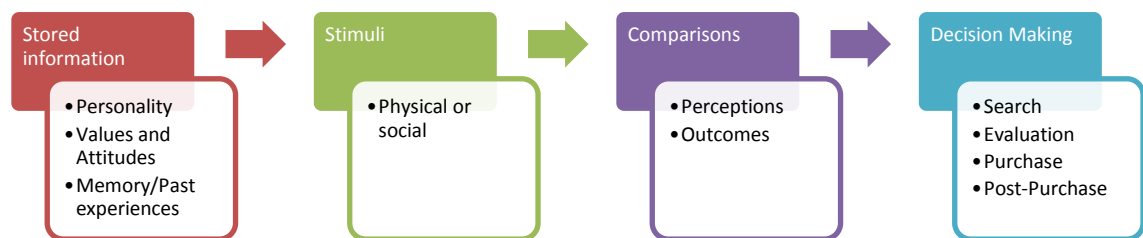
Figure 4-1 Representation of consumer behaviour according to Pellemans (1971)

It is possible that social factors influence behaviour through social norms (Ajzen & Fishbein 1980; Ajzen 1991; Hsu & Lu 2004) and social context.

People and communities are often ruled by norms through which members behave in a particular way, influenced by information and norms, which influences opinion adoption (Hsu & Lu, 2004). Moreover, social comparison, social facilitation (perception that others are performing), social learning, competition, cooperation and recognition have been found to influence motivation in order to build behaviour change (Fogg 2003).

On the other hand, social behaviour can differ across cultures, particularly in high individualist cultures, where individuals behave socially according to personal preferences (Aaker & Maheswaran 1997). However, culture is not the only feature with the capacity to influence social aspects; for example, differences in social classes in Latin American culture can be explained by cultural traits that have existed throughout history (Martín-Baró 1994).

4.3   Cultural influences

Research in consumer behaviour across cultures often takes into account consumer ethnocentrism (Luna & Gupta 2001). Consumer ethnocentrism is related to the purchase of foreign products, involving a sense of "belongingness" (Shimp & Sharma 1987, p.280). This implies that consumption has a meaning for the consumer.

In this thesis, there is a focus on the understanding of influence of advergames in consumer behaviour across cultures. That is, the key elements of this research are communications and behaviour. Thus, theories that involve not only marketing across cultures but also consumer behaviour should be considered in this research. In particular the influence of marketing communications and strategies in consumer behaviour across cultures.

There are many ways to understand the influence of culture in marketing and in consumer behaviour. However, as pointed by de Mooij (2015), most of research models such as Ethnic Consumer Culture, Regional Consumer Culture and so on are related to shared practices of consumption in a group and not about the actual shared values. Thus, this puts cultural values as a central point of research in consumer behaviour across cultures. However, it is important to mention that values could be separated in two categories. One is the individual value, which may vary across individuals in the same culture and the other is the collective value, which is shared among members from a group or culture (de Mooij 2015). In the case of this thesis, the focus is on collective value or, in other words, cultural values.

Cultural values are central in consumer behaviour across cultures mediated by marketing communications (see Figure 4-2), particularly because products could mirror cultural values. That is, if a product reflects a cultural value, it would be more accepted. However, the challenge for marketers and advertisers is how to represent and communicate those values.

 According to Luna and Gupta (2001), this could be related to:

- Symbols: conveyed by language, visual and auditory information

- Heroes: represented by ethnicity preference characterised by spokesperson, celebrities and family

- Rituals: consumer models of purchase, including several variables such as price and promotions; this is a way for consumers to secure their cultural identity by actions

In their framework, Luna and Gupta (2001) suggest that symbols, heroes and rituals can evoke affect, cognition and behaviour. Thus, the awareness of those cultural values is crucial for effective consumer behaviour; this suggests that marketing strategies should communicate and

decode those values. Although this aspect could be crucial while deadline with culture in the context of marketing communications, Luna and Gupta (2001) did not take into account the platforms of the marketing communications, leaving as an opportunity to expand the influence of other marketing media like games.
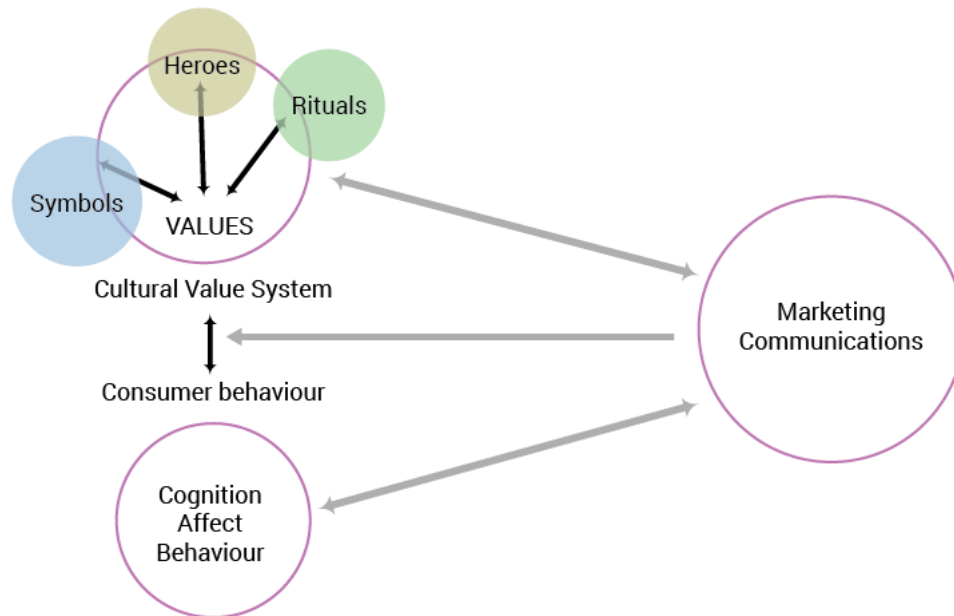
Figure 4-2 Interaction of culture and consumer behaviour, adapted from Luna and Gupta (2001)

The identification with heroes in consumer behaviour could be conveyed through cultural perspectives. One example is the symbolic consumption of brands such as *Harley Davidson* (Holt & Thompson 2004), representing a masculine association with characters like *James Bond, Dirty Harry, Rambo* and *Indiana Jones*. That is, when playing an advergame, consumers could symbolically choose a character that represents their heroic image. Thus, another point that could be added to Luna and Gupta's framework is the communication of those values and how this would very across different medias.

Another aspect to add to Luna and Gupta's framework is the influence of context or institutions that are wider than cultural values and expand culture in a national level. In marketing communications, national-level institutions like regulations, laws and governmental policies are also elements that moderate the effectiveness of advertising across cultures (Walsh et al. 2014).

Other aspects of consumer behaviour are influenced by culture: perception, motivation, learning and memory, group influence, social class, female/male roles, attitudes, decision making, purchase (e.g. loyalty and legal issues) and post-purchase (e.g. satisfaction) (Usunier & Lee 2005). Moreover, people from different cultures can also have different mental models in the forms of behaviour, communication, interaction and understanding (Evers & Day 1997). The result of this is a very complex set of variables that needs to be understood in the field of consumer behaviour.

This complexity behind consumer behaviour could be explained through the transmission of cultural meaning through values, consumer goods (e.g. objects, clothes, etc.) and rituals (e.g. lifestyle) (Mccracken 1986). This means that consumption is culturally meaningful and is in constant movement. Arguably, by consuming a product, consumers express their cultural behaviour. Consistently, consumption is linked to consumer lifestyle and identity (Barbosa 2004). That is, people can choose to be 'who' they want to be simply by purchasing a product. Thus, it is possible that this "consumption meaning" could differ not only across cultures but also across different brand categories, constructing other cultural "bubbles" within the national culture, functioning as subcultures. This approach, in the case of the purpose of this thesis could be problematic since the aim of this research is to explore culture at a national level. For example, individuals from China conferred more value to experiential characteristics while buying clothes, whereas South Koreans showed a greater desire for product quality (Kim et al. 2002). However this not imply that South Koreans will always prefer quality instead of experience while purchasing all products.

Another way to promote the transmission of meaning is through advertising. In the context of consumer behaviour, advertising functions in order to facilitate this transference of meaning, representing cultural values by communications (Mccracken 1986). This suggests that advertising carries symbolic representations of consumer behaviour, which is very similar to Luna and Gupta's (2001) approach of marketing communications.

As mentioned previously, people from different cultures also react differently to advertising. For example, advertising messages that show in-group benefits are more likely to be accepted in collective cultures, whereas individualistic approaches are more attractive to countries such as the US (e.g. individualistic) (Aaker & Maheswaran 1997). This shows that advertising and marketing communications need to respect the audience's cultural background.

Another way to understand the influence of culture in consumer behaviour is through habits. Habits play an important role in consumer behaviour, as they facilitate choices made during everyday life decisions (Usunier & Lee 2005). The main aspect is that habits can be immersed into social contexts, evoking social habits (Duhigg 2013). The concept is very similar to social norms, which implies that people act according to guidelines that are implicitly embedded by society. Thus, combining the theories in consumer behaviour, eight aspects influence behaviour across cultures: habits, associations, familiarity, metaphors, memory, values, norms and identity (see Table 4-1.)

Table 4-1 Factors that influence consumer behaviour and decision making across cultures

References	Habits	Associations	Familiarity	Metaphors	Memory	Values	Norms	Identity
Fogg (2003)	x						x	
Pellemans (1950)	x				x	x		
Hsu and Lu (2004)							x	
Allbritton et al. (1995)		x	x	x	x			
Kahneman (2012)	x	x	x		x		x	
Ajzen and Fishbein (1980)							x	
Zajonc (1968)		x	x					
Thaler and Sunstein (2008)	x		x					
Norman (2002)			x	x				
Ariely (2008)	x		x					
Duhigg (2013)	x						x	
Aaker and Maheswaran (1997)						x	x	
Mccracken (1986)						x		x
Luna and Gupta (2001)		x		x		x	x	
Usunier and Lee (2005)	x					x	x	x
Barbosa (2004)								x
Evers and Day (1997)		x	x	x				
Shimp and Sharma (1987)						x		x
Ajzen (1991)	x						x	
Grimes and Kitchen (2007)			x					
Walsh et al. (2014)							x	

4.3.1   A hybrid cultural model

Hybrid cultural models have been mentioned before in order to investigate cross-cultural differences (Chakraborty & Norcio 2009; Cho & Cheon 2005). For example, hybrid cultural models were used to compare interactive communication styles in corporate websites, using high and low contexts, power distance dimensions and collectivism and individualism characteristics, respectively, as a combination of the work of Hofstede (2001) and Hall (1981) (Cho & Cheon 2005).

Cultural models have international variables that are composed of categories that reflect cultural values and diversity of users, including political, economic and informational systems (Hoft 1995). However, it is important to mention that the use of cultural dimensions as a model for research needs to be carefully considered. De Mooij (2015) has argued that cultural dimensions should only be used when comparing groups or people and not in the individual-level. That is, comparisons should be undertaken considering a group of people and not just one person.

When discussing models of culture, Hofstede (2001; 2011) presented the Pyramid Model, with three layers of culture comprising personality (specific to the individual), culture (related to group or people) and human nature (what is common to all human beings). The model represents the interplay of individual values, social aspects and basic needs, reflected by the following cultural dimensions:

(a) **Power Dimension:** related to the degree to which a society understands inequalities among people (Hofstede 2001).

   a. *Implications:* the way hierarchies are constructed in interface design, including access to information, social roles, security and expertise (Marcus & Gould 2000).

(b) **Individualism vs. Collectivism:** represented specifically by individual or collective way to see relationships in society.

   a. *Implications*: personal time, freedom, challenge and family relations, honesty and respect (Hofstede 2001).

(c) **Masculinity vs. Femininity:** related to preferences among achievement, rewards, competition and cooperation.

   a. *Implications:* in interface design it can be related to control of navigation, graphics, cooperation, visual aesthetics and others (Marcus & Gould 2000).

(d) **Uncertainty Avoidance:** represented by the way society deals with the future.

   a. *Implications:* uncertainty avoidance can influence the way people from different cultures perceive navigation design in websites in terms of trust (Cyr 2008).

(e) **Pragmatic vs. Normative:** In normative cultures, people usually explain things as much as possible, whereas in pragmatic cultures situations, context and time are more important (Hofstede 2011).

   a. *Implications*: the way the information is presented; complexity

(f) **Indulgence vs. Restraint:** related to enjoyment of life and social norms that regulate society.

   a. *Implications*: Korean consumers consider enjoyment in life an important social value, which influences their purchase habits; the opposite is true for the Chinese consumers (Kim et al. 2002).

The list of cultural dimensions proposed by Hofstede (2011) is usually applied in comparative studies. Individualism-collectivism has been one of the most explored cultural dimensions (Hofstede 2001) in cultural research.

Hofstede's dimensions have received many criticisms from scholars. For example, Fang (2003) has argued that normative vs. pragmatic (the same as long/short term orientation) is not accurate, particularly if considering countries that have Confucianism in their core values, like China. Another critique is from McSweeney (2002), who argued that Hofstede's dimensions could have limitations since the data was collected from questionnaires from IBM workers who may have been influenced by organisational culture as well. Although Hofstede (2001) used questionnaires to collect the data to build his dimensions, the cultural model has been used in lots of cross-cultural research and particularly in interface design (Marcus & Gould 2000). Thus, in this thesis, the researcher will still consider Hofstede dimensions in order to compare cultures in the digital environment. Although Marcus and Gould (2000) have used Hofstede's dimensions in their study dated before McSweeney's critique, there is no evidence that Hofstede's dimensions could not be used in digital environments. In fact, Khaled et al. (2006; 2009) have used extensively Hofstede's collectivism-individualism dimension in their studies with serious games across cultures.

Another model is the *Onion Model* (Trompenaars & Hampden-Turner 1993), composed of basic assumptions (core), norms and values, and artefacts and symbols. Briefly, Trompenaars and Hampden-Turner's (1993) model includes dimensions like universalism-particularism (e.g. for Universalist cultures, rules are more important than relationships), individualism-communitarianism (individual-group relationship), specific-diffuse (related to involvement), neutral-emotional (e.g. expression of emotions, body language and attitudes), achievement-ascription (related to status), sequential time-synchronous time (time management), and internal direction-outer direction (connection and link to the control of the environment). Some aspects are very similar to the models of Hall (1981) and Hofstede (2001; 2011), which could work together in a hybrid model. This is why choosing more than one model could be richer for the research.

Hall's (1981) work, for instance, has showed four cultural categories in communication:

> **(a) Time.** Time-related assumptions can be classified according to *monochronism* or *polychronism* (Hall 1981). This assumption shows that in some cultures, time management is different.
>
> **(b) Space.** It is related to personal spaces and represented as high territoriality (high involvement with ownership and material things) and low territoriality (shared spaces).

(c) Context. *Contextuality* can be translated to the expression of a communication message within a context. For example, low-context communication involves explicit and direct messages and high-context communication comprises implicit and indirect messages (Hall 1981). People from high-context cultures can find advertising from low-context cultures very aggressive (Manzur et al. 2012).

(d) Information Flow. It describes the speed at which the message is sent to people. Some cultures are comfortable with slow messages and other with fast messages.

Hall's (1981) cultural dimensions are technically applicable to the scope of research that compares structures of communication styles as the author considers very specific dimensions that are totally related to communications. Moreover, in communication across cultures, issuing the right responses is more relevant than sending the "right" message (Hall 1981). This indicates that the focus is not on the message itself, but on the receiver of the message. Considering communication styles, individualism was found to be usually connected to low-context communication and collectivistic cultures are related to high-context communication (Hofstede 2001), which could be explained by the lack of personal contact among members of low-context cultures (Hall 1981).

Another model taking into account individual values is the structure proposed by Schwartz (2006). The model is configured around structures of individual values such as benevolence, tradition, security, power, achievement, hedonism, stimulation, self-direction and universalism, which open up the way to seven national-level value types (egalitarianism, harmony, embeddedness, hierarchy, mastery, intellectual autonomy and affective autonomy) (Smith et al. 2006). This model can prove helpful to understand a culture's values; including psychological meanings (see Table 4-2).

Hybrid cross-cultural models may well exist. For example, Lee, Choi and Kim (2008) presented a list of 36 cultural dimensions based on the works from Hofstede (2001), Hall (1981) and Trompenaars and Hampden-Turner (1993). By using only ten dimensions, Lee et al. (2008) built their hybrid cultural system in order to analyse cultural influences in user experience of electronic products. Although their dimensions were a reflection of a hybrid model for product experience, it shows that the dimensions can be merged into a stronger model.

Considering each cultural dimension presented in Table 4-2, it is necessary to highlight that the choice of which model to use is related to the countries to be compared and analysed in each investigation, together with how they interact within a digital environment. This aspect is explained in Chapter 6, with the choice of dimensions for Brazil and the UK.

Table 4-2 Pairs of cultural Dimensions, borrowed from Hofstede (2001; 2011), Hall (1981),

Trompenaars and Hampden-Turner (1993) and Schwartz (2006)

	Hofstede (2001; 2011)	Hall (1981)	Trompenaars and Hampden-Turner (1993)	Schwartz (2006)
Cultural Dimensions	Power Distance (High or Low), Collectivism and Individualism, Femininity and Masculinity, Uncertainty Avoidance (High or Low), Indulgence and Restraint, Pragmatic and Normative	Monochronism and Polychronism (time-related), Context (High or Low), Message speed (Fast or Slow), Territoriality (High or Low) (space-related)	Universalism and Particularism, Commutarianism and Individualism (similar to Collectivism-Individualism), Neutral and Emotional, Specific and Diffuse, Achievement and Ascription (similar to Masculinity), Sequential and Synchronic, Control (Internal or External)	Conservatism, Intellectual Autonomy, Affective Autonomy, Hierarchy, Mastery, Egalitarian Commitment and Harmony

4.3.2   Cross-cultural HCI

In cross-cultural Human Computer Interaction (HCI), the issue of cultural influence is often analysed in three ways:

- Internationalisation: the design is more neutral; language is often customised (Gasparini et al. 2011)

- Localisation: adaptation of cultural elements (Khaslavsky 1998) through tangible and intangible elements (Yeo 1996)

- Culturalisation: beyond localisation; providing the adaptation of game content (Edwards 2011)

Existing literature in cross-cultural HCI is usually related to representational variations among cultures (see Table 4-2), like colours, icons, symbols, pictures, time formats, jargon and abbreviations, where the difficulty in understanding them can impact learnability and the user's preferences (Bourges-Waldegg & Scrivener 1998). This is vital, as for example, colour associations and icon representations differ across cultures (Shen et al. 2006).

In terms of usability, Barber and Badre (1998) coined the term "culturability" or the usability principles applied in different cultures. Aspects related to that are colour, organisation, font/typography, shapes, icons, metaphors, language and sounds. In this case, *culturability*

functions as a guideline or heuristic for website design across cultures. However, little is known of this concept in terms of game design.

Internationalisation of interactive systems can be categorised in two ways. According to Yeo (1996), elements that are tangible such as time, calendars and translation should be considered as "overt" and are usually easy to be perceived in interactive systems. On the other side, intangible elements, classified as "covert" factors, are related to graphics, visual effects, colours, metaphors and mental models (Yeo 1996). Thus, this classification defines the incorporation of culture in two ways, as explained by Yeo's Cultural User Interface (CUI) (1996), focusing on the previous knowledge and familiarity of the target culture.

Considering marketing and advertising in website design, symbolic and aesthetic aspects of the visual presentations (including background colours) are subjected to different cultures and have higher importance in high-context cultures (Hermeking 2006). Particularly in user interface design, Hofstede's dimensions were analysed together with user interface design, confirming that websites are designed differently and according to the culture explored in the study (Marcus & Gould 2000). For example, simplicity, clear metaphors, easy navigation, mental models and limited choices were related to cultures with high uncertainty avoidance and websites with numerous choices and complex navigation were connected to cultures with low uncertainty avoidance (Marcus & Gould 2000). Thus, each component of the website such as navigation, information access, security, animation, choices, graphics and others is a reflection of a different cultural dimension, revealing that interface design is influenced by culture.

Regarding trust in websites for e-commerce for example, information design, visual design (balance, emotional appeal, and aesthetics) and navigation were found to be important antecedents of differences of e-loyalty across cultures (Cyr 2008), particularly regarding visual design (Cyr et al. 2010).

In the case of cross-cultural games, visual design does not differ: symbolism, colour, individuality, knowledge processing and location variables are included in the studies, particularly because language translation was found no longer sufficient to address the nuances of different cultures in games systems (Chakraborty & Norcio 2009). In addition, iconic information and familiarity with videogame technology were found to differ across cultures, as Americans were more "experienced" in games than Italians were, reflecting the way players from different cultures interact and interpret computer games (Greenfield et al. 1994). This familiarity with videogame technology could also reflect a level of "expertise" or gaming knowledge. Squire (2008) argued that this is related to a level of gaming literacy, in which players could differ according to their knowledge gaming consumption and production. Moreover, the way the information is

communicated has a different aspect. For example, the direct style of individualist cultures may be offensive to collectivistic cultures (de Mooij & Hofstede 2011).

Another way to examine cross-cultural HCI is through specific lenses such as semiotics and conceptual metaphors. These approaches are discussed in this subsection.

Table 4-3 Cross-cultural design representations in website design

References	Design Representations											
	Graphics	Navigation	Metaphors	Typography	Colour	Language	Choices	Sound	Animation	Access	Security	Calendar
Shen et al. (2006)	x		x		x		x	x				
Yeo (1996)	x		x		x	x		x				X
Marcus and Gould (2000)	x	X	x	x	x	x	x	x	x	x	x	
Salgado et al. (2009)	x		x									
Cyr et al. (2010)	x		x		x					x		
Hermeking (2006)	x											
Bourges-Waldegg and Scrivener (1998)	x		x		x	x						
Barber and Badre (1998)	x		x	x	x	x		x	x			

4.3.2.1 Semiotics

Reflections regarding user needs and interpretations in HCI can be difficult to predict, as long as it combines content designed through *Semiotics Theory* (de Souza 1993). According to Peirce (1991), *semiotics* is the study of signs as a representation of something, as a reference of a type of idea of this sign in one's mind. Thus, a code or a system of signification manages the process of communication of a signal from a source to a destination (Eco 1976).

Semiotics can also appear as cultural codes, comprised of behaviour and value systems, in order to model social organisation and communication among groups of people (Eco 1976).

In Design, semiotics is related to the communication established between the product and the user (Niemeyer 2003). This implies that Design should work as a meaningful link between the product and the audience. This could be achieved by the deeper understanding of the user's prior experiences, memories, beliefs and cultural values (Niemeyer 2003).

De Souza (1993) explains reasons for this relationship, as HCI involves communication (message senders and receivers) through interface design, particularly through the production of signs in

computer systems. Moreover, symbols are related to representations of signs in semiotics (Peirce 1991).

Semiotic Engineering, introduced by de Souza (1993), is a way to solve the problem of non-situated context and context of use, in which the messages sent by computers are developed through semiotics principles, including text and iconic elements. The development of signs was created following Eco's (1976) parameters for modes of sign production, which encompasses recognition, the creation of examples and samples, and replication and invention of the sign (Eco 1976). This principle shows that the antecedent of the sign is the identification of the sign itself.

Combining semiotics with computer interactions could expand the understanding of user experience in computer games. As semiotics can differ across cultures (Eco 1976), it is possible that this approach could give some guidance for cross-cultural gaming research.

4.3.2.2   Conceptual metaphors

Metaphors can assist in the representation and description of people, objects, structures, processes, consequences and expression of values, through structural (parts of the system), operational (behaviour of the system) and pragmatic (understanding of the interface) metaphors (Marcus 1998). Those three expressions of metaphor can help in the construction of the best way to use them in HCI.

Multi-cultural systems could utilise conceptual metaphors for effective communication and interaction with users, according to their cultural requirements (Salgado et al. 2009). Consistently, metaphors should be localised and immersed into a culture (Evers 1998).

The concept of metaphors is applicable to cross-cultural studies in HCI because they are related to analogies or familiarity (Carroll & Thomas 1982). This also suggests that, before performing a task, users try to find connections through associative memory (Lang 2006). Moreover, metaphors can be used in order to evoke emotional connections (Desmet & Hekkert 2007). In user interfaces, metaphors can be related to an activity (e.g. users have the control of the process, according to their goals), mode of interaction metaphors (e.g. how the user views the computer system) and task domain metaphors (e.g. how the tasks are structured) (Marcus 1998). In other words, it combines the identification of the task, familiarity and understanding.

Some advantages for the use of metaphors are related to the idea of familiarity, in which users can work with their intuition and reduce tension and boredom (Marcus 1998). Metaphors can also help learning and memorisation, facilitating communication and cultural associations,

through which users have the possibility to interpret the metaphor with their own experiences (Marcus 1998).

In games, metaphors can create emotional relations, combined with the fantasy world, as they represent a familiar situation to the players, making the game easier to understand (Malone 1982). This makes the concept of metaphor an important strategy in building culturally-related games and advergames.

4.4   Behaviour Design

Issues related to consumer behaviour can be addressed in three ways: (1) physiological tensions, (2) unconscious motives and (3) socio-psychological approaches about people's reactions (Herzog 1967, pp. 32-41).

In order to understand the impact of motives, habits, needs, values and environmental influences, the next section reviews the behaviour models that drive consumer behaviour in general and within cultures.

4.4.1   Behavioural models

The Theory of Planned Behaviour (TPB) proposed by Ajzen (1991) focuses on how intentions are formed because of attitudes, norms and perceived control over the behaviour. Considering health-related behaviours, the TPB has been employed as an effective way to explain and predict behaviour such as foods choice, smoking and others (Hardeman et al. 2002). The TPB is considered an extension of the Theory of Reasoned Action (TRA), developed by Ajzen and Fishbein (1980). The only difference is that TPB includes the variable of perceived control over the behaviour (perception that someone is responsible for the behaviour). In both systems, attitudes and subjective norms, defined by beliefs, lead to intentions and therefore to behaviour (Ajzen 1991).

For example, previous research on consumer behaviour has found that attitudes and subjective norms can predict the intention of wine consumption, particularly through the association of drinking wine as a healthy habit by consumers from Southern California (James & Christodoulidou 2011). Specifically, this finding illustrates that beliefs can vary according to the type of information that consumers have. In addition, beliefs have also been cited as influencers of behaviour in two ways: one, as values and two, as motivators (Duhigg 2013). However, although both TPB and TRA illustrate the relationship between intentions and behaviour, the theories do not include directly cultural influences.

Fogg's (2009) Behaviour Model looks at three factors that influence action: motivation, ability and trigger (cue). Reflected in the design of products, cues (external and internal, related to environmental triggers or association), reaction, evaluation (benefits, costs, alternatives), ability (skills and resources) and timing were found to be preconditions for a conscious action (Wendel 2014). Fogg's model has a few similarities with TPB and TRA; for example, ability could be related to control and motivation could be related to intentions (see Table 4-4). What Fogg did not take into account, though, was culture. However, it is possible that associations conveyed by the triggers could be culturally-related.

Wendel (2014) criticised the fact that previous theories of behaviour change, like TPB for example, do not highlight the features that a product or service should have in order to drive behaviour change. Most of the theories showed that attitudes, perceptions, environmental levels, habits, needs, emotions and social factors often influence intentions. However, they do not highlight design principles in order to build a conditioned tool that will help people to perform the task, for example. According to Wendel (2014), it is necessary to emphasise how products can set up requirements for action, that will involve aspects like cue, reaction, evaluation, ability and timing (the right to perform the action). Moreover some scholars (e.g. Wendel 2014; Triandis, 1977; Gatersleben et al. 2002) , mentioned that habits influence behaviour and therefore have an important role to play in behaviour design.

Habits exist because the brain is always finding a way to save energy (Duhigg 2013). When that happens, there is a process of cue, routine and reward that makes the brain cease from participating in decision making. In this situation, routine is something simple that does not require too much conscious effort and could help to change behaviour (e.g. in order to stop smoking, people need to identify cues and rewards and therefore change the routine) (Duhigg 2013). This aspect is congruent with Kahneman's (2012) systems of thinking.

The influence of factors in the environmental level is represented by the Needs, Opportunity and Ability (NOA) Model in which the environment, composed of technology, economy, demography, institutions and culture, influences needs, opportunities and abilities, which will in turn impact on motivation and behavioural control (Gatersleben et al. 2002). The system is intention-based, but with a clear influence of a wider environment, which will involve motivation. This model adds cultural influences (at a wider level) such as a government's politics, for example.

Another model is Triandis' (1979) Theory of Interpersonal Behaviour (TIB), represented by the relationship among attitudes, contextual factors, personal capabilities and habits. In essence, the model includes attitudes toward the past and the influence of emotions and social factors in behaviour. Compared to TPB and TRA theories, the TIB seems to offer greater explanation of

behaviour and contributions through the role of beliefs and habits within behaviour (see Table 4-4).

Table 4-4 A comparison of behavioural models, composed of those of Fogg (2009), Ajzen (1991), Ajzen and Fishbein (1980), Triandis (1979) and Gatersleben et al. (2002)

References	Motivation	Ability	Trigger	Attitudes	Beliefs	Norms	Emotions	Past behaviour	Habits	Opportunities	Needs	Control	Intentions
Fogg's Behaviour Model (FBM) (2009)	x	x	X							x			
Theory of Planned Behaviour (TPB) (Ajzen 1991)		x		x	X	x						x	X
Theory of Reasoned Action (TRA) (Ajzen & Fishbein 1980)				x	X	x							X
Theory of Interpersonal Behaviour (TIB) (Triandis 1979)							x	x	x				X
Needs Opportunities, Abilities model (NOA) (Gatersleben et al. 2002)	x					x				x	x	x	

4.5   Summary

Consumer behaviour is influenced by individual, social and cultural factors, such as:

- Personality and prior experiences shape the individual's decision-making process. This process could include associative memory

- Social aspects, norms and context are the main actors in influence of cross-cultural consumer behaviour

- Social context can influence people's motivation through cooperation and competition

- Culture modifies the individual's perception, motivation, communication, interaction, learning, memory, cognition, attitudes, attitudes and decision making, both during purchase and post-purchase

Two systems of thinking dominate the decision-making process: "System 1", which is automatic, and "System 2", which is deliberative. This means that people tend to make decisions according to their previous experiences, beliefs and habits, which in this case, might be influenced by culture.

Culture is the combination of patterns of ideas and values that are shared by people in a group, including beliefs, habits, meanings and traditions. This implies that culture could be considered as a social construct.

Studies regarding cultural differences include:

- Hybrid cultural models, combining the dimensions of Hofstede (2001; 2011), Trompenaars and Hampden-Turner (1993), Hall (1981) and Schwartz (2006). Most cross-cultural research applies Hofstede's dimensions

- In HCI, navigation information, visual design, information design and other design components like colours, graphics, and simplicity are influenced by culture

- Icons and familiarity in videogames influence the player's interaction

- Semiotics as the way to build the best interaction and communication between the user and the system

- Symbolic interactionism, as a technique to understanding meanings through social activities

- Conceptual metaphors, representing the approach to analogies, associations and familiarity

A few approaches of the behavioural model analysed concepts such as habits, emotions, past experiences, social factors, environmental factors and motivation. This locates motivation as an important factor in consumer behaviour, which could be shaped:

- In games, autonomy, flow, enjoyment, fun and control could influence intrinsic motivation

- By emotions derived by gameplay experiences, particularly through challenges, immersion and social interactions

- By attention, relevance, confidence and satisfaction as antecedents of motivation, particularly in learning contexts

Considering consumer behaviour across cultures and advergames, it is possible to notice:

- Lack of metrics of cross-cultural advergaming design

- Lack of research that maps elements of advergames in different cultures

- Lack of research that addresses the impact of localised game interface design in cross-cultural consumer behaviour

In order to unify all these disparate elements into a whole, a unifying framework is needed, so that some meaningful understanding of the complex phenomenon of the interaction of culture, consumer behaviour and HCI can emerge. This understanding can also help in the design of games. The next chapter presents such a unifying framework for application later in this thesis, based on the literature discussed in Chapter 2, Chapter 3 and Chapter 4.

Chapter 5: Development of the CAKE framework

Previous research indicates that there is a gap in understanding all the links between consumer behaviour, Human-Computer Interaction (HCI) and culture when designing advergames. This chapter considers this thoroughly and examines the case for a new framework for advergame design.

The conjecture (*Advergames influence and embed cross-cultural consumer behaviour*) suggests a connection between the way the advergame is designed and the way people understand the advergame message in different cultures. Therefore, the research conjecture integrates the interplay of Culture, Consumer Behaviour and Advergames, which were addressed in Chapters 2, 3 and 4 of this thesis (see Figure 5-1).
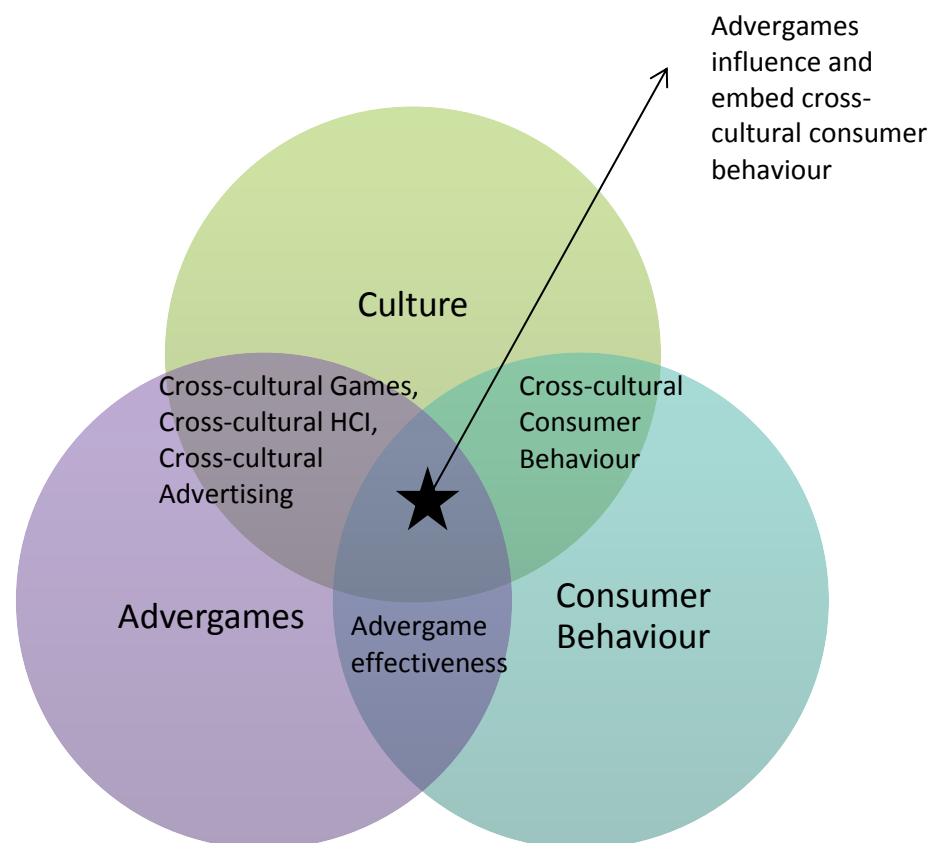
Figure 5-1 Interplay of Culture, Consumer Behaviour and Advergames

As illustrated by Figure 5-1, the triad culture-consumer behaviour-advergames created three different clusters:

(1) Cluster 1: Cross-cultural Games, Cross-cultural HCI and Cross-cultural Advertising

(2) Cluster 2: Cross-cultural Consumer Behaviour

(3) Cluster 3: Advergame effectiveness

In each cluster, it is possible to identify two subgroups: one according to the features of the game or advertising appeal and another following consumers' characteristics (see Table 5-1). For example, in cross-cultural HCI, there are elements related to the characteristics of the system, whereas in cross-cultural consumer behaviour there are features that belong to consumers (e.g. cultural values and social interactions). The identification of these clusters could help those involved to recognise the cluster that lacks description, and which leads to the main research question:

> *RQ1: What are the dimensions and components of the framework that integrates cross-cultural advergaming design and cross-cultural consumer behaviour?*

To address this question, the researcher developed the CAKE framework. The CAKE framework (*The framework for Advergaming Design across Cultures*) is a layered framework, which shows the elements within advergames that could evoke cross-cultural consumer behaviour.

Table 5-1 References utilised to compose the CAKE framework, according to the clusters informed by Figure 5-1

	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 (Edwards 2011); Advertising appeal (Orth et al. 2007); Visual representations, graphics, icons, colours (Chakraborty & Norcio 2009); Game rules (Khaled et al. 2009); Cultural appropriation (Vasalou et al. 2014); overt vs. covert interface (Yeo 1996); interface design, navigation (Marcus & Gould 2000); metaphors (Salgado et al. 2009)	Integration of symbols, rituals and heroes (Luna & Gupta 2001); product attribute vs. consensus information (Aaker & Maheswaran 1997); colour associations (Madden et al. 2000); product evokes different interests (de Mooij & Hofstede 2011)	Integration between the brand and the game (Wuts et al. 2012); game balance (Johnson & Wiles 2003; Hernandez 2011); interactivity and media richness (Novak & Hoffman 1996; Sukoco & Wu 2011); brand category (Faber & Lee 2008; Lee & Youn 2008); brand identifiers (Lee & Youn 2008; Martí-Parreño et al. 2012; Waiguny et al. 2013)
Player/Consumer characteristics	Meaning by gameplay (Salen & Zimmerman 2004); Gaming knowledge (Greenfield et al. 1994);	Cultural values (Luna & Gupta 2001); in-group or others' benefits (Williams 2013); lifestyle (Barbosa 2004); sense of belonging (Shimp & Sharma 1987); cultural dimensions	Arousal (Qin et al. 2009; Hernandez & Minor 2011); flow (Johnson & Wiles 2003; Hernandez 2011) product involvement (Lee & Youn 2008; Cauberghe & De Pelsmacker 2010; Shelton & Gross 2010); brand familiarity (Waiguny et al. 2013)

As highlighted in Chapters 2 and 4, cross-cultural studies tend to follow representations in user interface design, which are mainly visual. Thus, one main component is the advergame interface. However, the interface of an advergame usually reflects what lies behind it: advergame rules,

advergame narrative and the advertising message, which are part of the advertising content. Thus, the advergame interface reproduces the advergame content.

Following the principles of *Culturalisation* from Edwards (2011), content is a reflection of culture. What Edwards (2011) argues is that content is what the player interacts with, while culture is this content tailored according to a particular context. Thus, culture and context are combined within the content. Edwards (2011) provided a valuable insight in terms of cultural integration within games; however, he did not study this application in games for advertising purposes (i.e. advergames). Therefore, the CAKE framework reinforces Edwards' (2011) propositions, merging them with advertising and cross-cultural consumer behaviour. Thus, the CAKE framework followed two stages of development. First, it was crucial to integrate the game content with the advertising content. Since advergames are created around a message and brand integration is one of the main aspects that promote advergame effectiveness, representations of the brand should be incorporated by the advergame content. Thus, advergame content is composed of the advertising message, which can be expressed by the advergame itself and advergame elements, such as narrative, rules, and visual and audio representations (e.g. assets). The difference is that there is an addition of brand representations to the advergame content. Second, it was necessary to consider the point of view of the consumer-as-player. For example, after gameplay, consumers tend to change their attitudes towards the brand and the game, which could be positive or negative. Thus, from the perspective of consumer behaviour, attitudes towards the brand are a way to represent the psychological outcomes of gameplay. Another crucial characteristic is the attitudes towards the game. Those perceptions reflect the experience with the game as "whole", combined with flow and arousal (see Chapter 2 for details). The extracted components are represented in Table 5-2.

Table 5-2 Extracted components from Table 5-1 that constitute the CAKE framework

	Cross-cultural Games, Cross-cultural HCI, Cross-cultural Advertising	Cross-cultural Consumer Behaviour	Advergame effectiveness
Extracted components	(1) Cultural representations, audio (e.g. game assets, mechanics) (2) Advergame theme (e.g. contextual relevance, advergame message)	(5) Cultural dimensions, cultural values, norms (6) Variations in consumer attitudes (e.g. attitudes towards the brand)	(7) Brand representations (e.g. colour, typography, sound, mascot, etc.) (8) Advergame experience (including arousal, attitudes towards the game and flow)

	(3) Advergame Interface		
	(4) External factors, social context		

5.1   Layers, components and elements of the CAKE framework

In this section, components and elements of the CAKE framework are developed and discussed. The CAKE framework has three levels of complexity: (1) layers, (2) components and (3) elements. Briefly, elements are part of the components, which are categorised in each layer (layer > component > element). Following the extraction of components and elements from the literature review (see Tables 5-1 and 5-2), this section introduces the CAKE framework as a layered framework and explains the development of each layer.

5.1.1   Core layers: Consumer and Content

The core layers of the CAKE framework are *consumer* and *content*. *Content* originated from the advergame as a game, while *consumer* was born from *consumer behaviour*. The yellow section (see Figure 5-2) represents the consumer side, such psychological aspects and the green side represents the content from the game. Content and consumer layers function like "spectrums" that separate the characteristics of the game (darker side) from the characteristics of the individuals (lighter side). The whole framework follows this pattern of dark-light sections. The green side represents the game itself with the core elements of an advergame that are crucial when dealing with advergame design across cultures. The yellow part represents the consumer's psychological outcomes also crucial when understanding cross-cultural consumer behaviour.
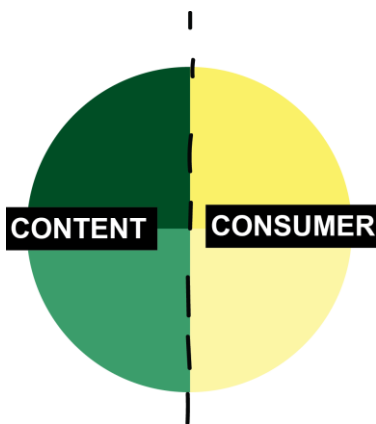
Figure 5-2 *Content* and *consumer* layers (dark and light sides) and components (green and yellow)

5.1.2 Medium layer: Culture

The medium layer (pink colour in Figure 5-3) represents culture. The cultural layer appears in both sides of the CAKE: content and consumer. This is represented by the darker and lighter spectrums in the CAKE framework. This layer enfolds content and consumer layers.
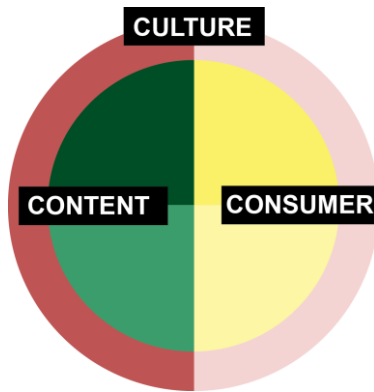
Figure 5-3 The addition of the *culture* layer (pink)

5.1.3 External layer: Context

The external layer (blue colour in Figure 5-4) represents context. This external layer encompasses the other layers in one single "globe". The context layer enfolds the content and consumer layers and the cultural layer. In other words, this means that *context influences culture* (this is represented by the dashed line that separates culture from context).
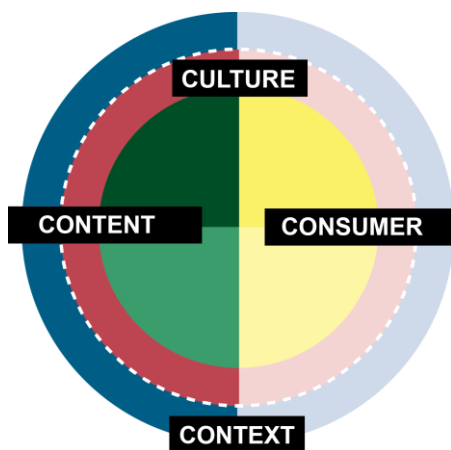
Figure 5-4 The addition of the *context* layer (blue)

5.1.4 All the layers combined

While considering Table 5-1, a few elements could overlap: advergame assets and advergame content express brand representations and cultural representations. In parallel, context is also represented in the advergame content. Thus, while considering those components, it was possible

to obtain four main layers: content, context, consumer and culture. Those are represented in Table 5-3. The connection between the layers denotes the holistic characteristic of the CAKE framework. *Culture*, for example, can be represented within the advergame through cultural representations. However, *culture* also encompasses consumer values and cultural dimensions. Therefore, the four layers of the CAKE tend to overlap. In Table 5-3, this is represented by the symbol ♯, showing that a particular component can be also part of another layer. However, it is important to highlight that for each component there is a "main" layer. These are represented by the symbol ✓ in Table 5-3. As an illustration of the extraction and integration of each layer of the CAKE framework, Figure 5-2, Figure 5-3 and Figure 5-4 show the process of the composition of the four layers of the CAKE. First, the categorisation is composed of the dual content-consumer, which illustrates the idea of game-player. Thus, the "dark side" of the CAKE is represented by the content spectrum, while the "lighter side" is represented by components related to the consumer spectrum. The CAKE starts building the other layers outside the core layers (content-consumer). What happens is that culture can be also part of consumer and content, because it is "layered". However, the main layer is culture. The same happens with context.

Table 5-3 Extracted components that compose the 4Cs of the CAKE

Extracted components	Consumer	Culture	Content	Context
Cultural representations		✓	♯	
Advergame theme			♯	✓
Cultural values	♯	✓	♯	
Brand representations			✓	
Advergame experience	✓			
Attitudes towards the brand	✓			
Advergame Interface			✓	
External factors	♯			✓

✓ Main layer component

♯ Overlapped layer component

The CAKE framework was constructed through a review of the literature of cross-cultural HCI, cross-cultural consumer behaviour and advergame effectiveness and it extended them by:

- Offering the integration of elements and components within advergame design that could address the issues highlighted by cross-cultural HCI, cross-cultural advertising and cross-cultural consumer behaviour

- Integrating current research in advergame influences in consumer behaviour

- Providing a range of components of advergame design, particularly through the advergame interface

In the next subsections, the components of the CAKE framework are discussed based on the layers of *culture, consumer, content and context*. For each layer, the components are presented and developed into an integrated framework, which is described further in this section.

5.1.5 Consumer

The *consumer* layer represents psychological aspects. In terms of advergaming design, the *consumer* layer is strongly related to advergame effectiveness and game experience. This layer involves brand familiarity (Waiguny et al. 2013), arousal (Qin et al. 2009; Hernandez & Minor 2011), game experience (Calvillo-Gámez et al. 2010), flow (Johnson & Wiles 2003; Hernandez 2011), and attitudes towards the brand. Those aspects were discussed in Chapter 3.

5.1.5.1 Attitudes towards the brand

Attitudes towards the brand are related to brand beliefs and could be moderated by brand familiarity (Waiguny et al. 2013). As brand beliefs influence attitudes, perceptions according to each brand category could be included. In fact, brand category is important in terms of attitudes as low-involvement and high-involvement brands evoke different perceptions.

As attitudes towards the brand could be induced by attitudes towards the game (Faber & Lee, 2008), it is crucial to examine advergame experience and other aspects related to gameplay, which is explained in the next subsection.

5.1.5.2 Advergame experience

Considering the literature in game design and advergames, game experience can be translated by:
- Game enjoyment
- Flow
- Arousal

Game enjoyment could be conveyed by game design, considering the gameplay and the game environment (Calvillo-Gámez et al. 2010). As advergames are games, it is possible to examine advergame enjoyment through the lens of game enjoyment.

Flow is about positive experiences in games and advergames, particularly through the balance between challenges and abilities (Bizzocchi et al. 2011). Considering that challenges are related to

rules and game design, rules and advergame assets could be advergame elements that induce flow.

In advergames, arousal is important when dealing with emotional connections. Curiosity is one element that evokes such outcome and it could be identified within the advergame. This aspect suggests that story and narrative have a strong relationship to arousal, as curiosity is related to the order of elements inside the game (Malone 1982). This feature could be related to the advergame narrative and supported advergame assets.

5.1.6 Context

The addition of context may be a way to understand the codification of the advertising message incorporated by the advergame.

In the CAKE framework, the context layer is expanded through:

- External factors, such as social interactions, norms and digital games production, all reflected in the acceptance and usage of game technology (Mäyrä 2007)
- Contextual information within the game (Squire 2006), supporting the advergame theme

5.1.6.1 External factors

Cultural norms are also related to game production and technology (Mäyrä 2007). For example, one culture might have a more mature gaming market and industry. In addition, external social norms may influence gameplay experience, which could be mediated by aspects like social play (or playing with others) (Mäyrä 2007). In terms of consumer behaviour, cues to action and resources could represent external factors (Wendel 2014). Thus, in the CAKE framework, external factors are aspects that influence consumer behaviour and player experience from the "outside. In the case of the CAKE framework, external factors focus on norms that go beyond cultural values. That includes macro influences, like laws, regulations and institutions. This aspect is crucial while studying advertising across cultures in a national level (Walsh et al. 2014).

5.1.6.2 Advergame theme

Within the advergame, context could be related to the theme of the game, through relevant information, enhanced by cues from the advertising message (Wang 2006). This relevance can be also moderated by culture. For example, context reflects events that happen that are celebrated in different cultures (Edwards 2011). In advergames, the advergame theme is related to the advertising message. Thus, in summary, the *context* layer in the content spectrum is composed of

internal cues in advergame design that represent external factors (consumer spectrum) through the advergame theme.

5.1.7   Culture

Culture in the CAKE framework can be perceived through two ways:

- *Cultural representations* inside the advergame
- *Cultural values* that are part of the consumer's values and norms, supported by cultural dimensions

The latter influences the outcomes of the advergaming interaction, whereas the former reflects culture.

While merging culture with advergame content, there is a key component – representations – that is mostly visual and may include sound effects and music. Therefore, the component that combines content with culture is *cultural representations*.

5.1.7.1   Cultural representations

Cultural representations emerged primarily from cross-cultural HCI and cross-cultural games theories. Chakraborty and Norcio (2009) attest that colour and symbolic/visual elements could be culturally implemented in cross-cultural games. Thus, considering cultural representations in advergame design, it is suggested that colour and symbolic representations are the constituents of this component. Khaled et al. (2006) suggested that the game mechanics could reflect cultural aspects, while incorporating rules and assets. Therefore, it is suggested that cultural representations appear within the advergame structure, being part of the advergame content and represented by the advergame interface.

5.1.7.2   Cultural values

In the context of the current research, there are two ways to investigate cultural values across cultures:

- Cultural dimensions
- Cultural values, such as heroes, symbols and rituals (Luna & Gupta 2001)

As reviewed in the literature, cultural values can be examined through cultural dimensions, which include the approaches of cross-cultural psychology theorists, such as Hofstede (2001; 2011), Schwartz (2012; 2006; 1992) and Hall (1981). Thus, the culture layer is one side of the cultural values and could work in conjunction with the cultural representations, particularly if considering the reflections in interface design (i.e. Marcus & Gould 2000). This can be also translated through

the lens of cultural conventions. For example, Walsh et al. (2014) argued that symbols tend to influence the way people interpret messages, functioning as guidelines.

In marketing communications, Luna and Gupta (2001) proposed the value model of heroes, symbols and rituals. Heroes can be a manifestation of other people's influence in people's choices. Celebrities and members of a group are part of the heroes category (Luna & Gupta 2001). Features related to character design can be also included in this classification. In the advergame, this aspect can be a spokesperson, celebrity, NPCs or mascot (if applicable). As not all games have characters, this aspect can be reflected by the opinions of others or even social media integration, which is external to the advergame.

In Luna and Gupta's (2001) model, symbols are objects that carry meaning for members from a particular culture. In terms of cross-cultural HCI, symbols can be icons, typography, colour and graphics (Chakraborty & Norcio 2009). In the advergame, symbols could be the scenario, familiar objects and graphics that respect cultural preferences, such as colour. These characteristics are also promoted by cultural representations.

Rituals are related to the way people behave in certain situations, following subjective norms (Luna & Gupta 2001). Walsh et al. (2014) have also mentioned that practices, rituals and beliefs can influence behaviour, particularly if considering decision making processes. Rituals can include the preference for solving problems together, and valuing collective perspectives (Khaled et al. 2006). Thus, in the advergame, rituals could be related to the meaning that players give to the rules of the game.

The difference between the components *cultural values* and *cultural representations* is the point of view. Values are part of the consumer system, while the representations are the reflection of those values within the advergame.

5.1.8   Content

According Waiguny et al. (2013), advergame content can be explored through:

- Advergame assets
- Story
- Rules

Advergame content has a direct relationship with the MDA framework (Hunicke et al. 2004), through mechanics, dynamics and aesthetics. Game assets are part of those mechanics, which are reflected in the aesthetics of the game. Following this perspective, the main interactive point of

the advergame becomes the advergame interface (see Figure 5-5), which would be the equivalent of the "aesthetics" from the stance of Hunicke et al. (2004).

As discussed in the literature, advergame are games built around a message. Thus, part of the advergame structure tends to reflect the advertising message, which involves the integration of brand features.

Therefore, while analysing the literature in cross-cultural games, HCI and advergames, content could be split into:

- Advergame message, composed of representations of the brand
- Advergame interface, which reflects assets, rules and narrative

5.1.8.1 Brand representations

In advertising, content becomes the message, which spills over into the design of the advergame (see section 3.2, Chapter 3). As the advertising message reflects aspects related to the brand, it is crucial to understand the features that represent the sponsored brand, particularly because this message is created around the brand value (Rocha 2010). Elements that are related to the brand are brand material (logo, objects, colour, sounds) (Rocha 2010) or brand identifiers (Van Reijmersdal 2009), spokes-characters and packaging (Paek et al. 2014), if applicable (not all games have characters/avatar; for example games like *Tetris*).

Thus, in summary, advergame content is composed of advergame structure (e.g. rules, assets and narrative) and brand representations. Those aspects are presented and supported by the advergame interface.

5.1.8.2 Advergame interface

The advergame interface represents the layer of interaction between the advergame content and the consumer. As mentioned in the previous subsections, advergame interface tends to support cultural and brand representations. Advergame interface could be also expanded through the utilisation of visual cues, like colour, graphics (including typography and scenario), avatar design, and symbols (including icons). The game world for example would reflect such cues. The difference between a general game interface and the advergame interface is the integration of the message. Thus, visual cues that are related to a brand, for example, could be part of the advergame interface. In terms of culture, the same could happen; visual cues could reproduce cultural values through terms such as *Culturalisation* and localisation. Regarding context, visual cues replicated by the interface could represent relevant content and advergame theme. In

addition, the advergame interface reveals associations that lead towards fantasy and story, and allow players to interact with the content, through a replication of the game rules.

In other words, the advergame interface sustains 3Cs of the framework (content, context and culture), interacting with the other C (consumer) through visual cues, associations, metaphors and cultural preferences. The integration of those layers, components and elements is discussed in the next subsection.

Table 5-4 Layers, components and elements of the CAKE framework

Consumer layer		
Component	Description	Elements
Attitudes towards the brand	Thoughts, beliefs, perceptions and opinions about a brand	• Could be negative or positive; favourable or unfavourable • Influenced by brand familiarity • Related to evaluations of the brand • Influenced by positive or negative game attitudes/experience • Can be explicit or implicit; explicit is more about evaluations, whereas implicit is about automatic associations
Advergame experience	The experience after advergame interaction	• Enjoyment and satisfaction after gameplay; could be positive/negative • Arousal • Flow experiences
Cultural layer		
Component	Description	Elements
Cultural representations	Symbolic elements that represent and respect cultural values	• Colour, graphics, typography and scenario • Avatar design (if applicable) • Symbols (including icons) related to a culture • Stories related to a culture • Rules that reflect a cultural paradigm
Cultural values	Consumer's personality and social norms	• Symbols • Heroes • Rituals • Cultural dimensions
Advergame content layer		
Component	Description	Elements

Brand representations	The integration between the brand and the game	• Brand material: logo, objects, colour, sounds, spokes-characters and packaging (if applicable) • Represents the brand message
Advergame interface	The interactive point between the consumer and the advergame	• A reflection of advergame structure, content, message, culture and context • Includes usability, visual aesthetics, game world and WIMP elements • Includes the advergame theme, brand and cultural representations
Context layer		
Component	Description	Elements
Advergame theme	The strategy of the advergame message	• Can be integrated in the advergame structure • It is part of the advergame strategy • Relevant information for members from a particular culture/group
External factors	Social, political and economic aspects that influence people from a nation/group	• Games industry maturity • Advertising policies • Economy

5.2   The CAKE framework explained

This section explains the relationship between layers, components and elements, working together in order to build the CAKE framework. The conceptual framework (CAKE) (Figure 5-5) represents the relationship between the advergame, interface and consumer/player, considering cultural values and social influences incorporated within the advergame. The acronym CAKE characterises the layers of the framework, as an analogy of a "cake" (see Figure 5-6), illustrated by layers. Some layers, though, might overlap (see Figure 5-7). For example, content includes culture and context; however, context could represent a cultural aspect (this is why the layer is separated by a dashed line). Therefore, culture in the framework represents values and preferences, whereas context embodies relevance and information.

The internal layers of the content depend on each other. Rules, visual elements and narrative function as a system. Rules depend on visuals to appear to the player; if the rules are not *represented*, the players will not be able to interact with the game. The game narrative follows the same principle. Visual elements within the game evoke a sense of narrative as they *represent* this narrative. Therefore, the advergame *interface* intermediates this interaction with the player, allowing him/her to experience the advergame.

The consumer (and his/her cultural background), therefore, *moderates* the perception of the elements represented by the interface of the game. For example, if the consumer is familiar with such brand, and if the brand is represented inside the advergame through particular cues, familiar associations with the brand and previous experiences with the brand (e.g. attitudes) would be evoked.
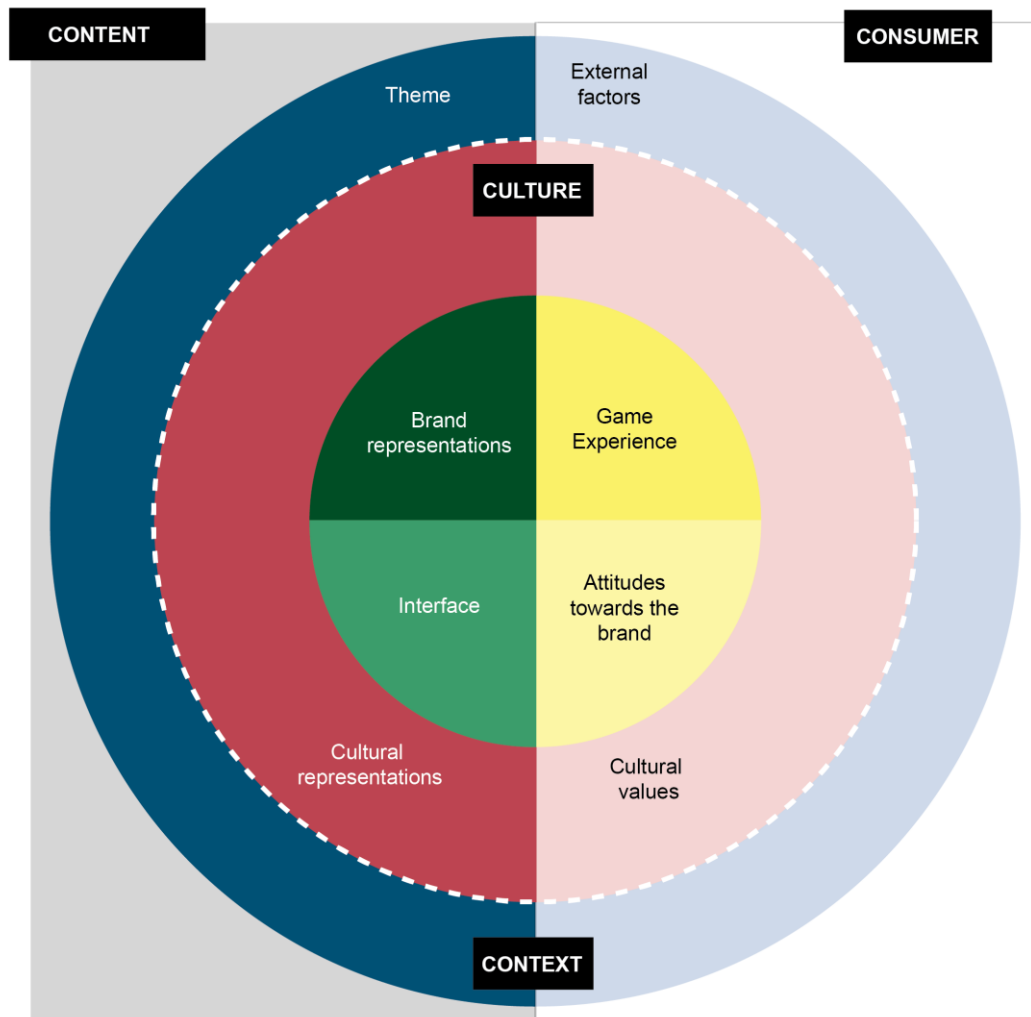
Figure 5-5 Layers, components and elements of the framework for Advergaming Design across Cultures (CAKE)
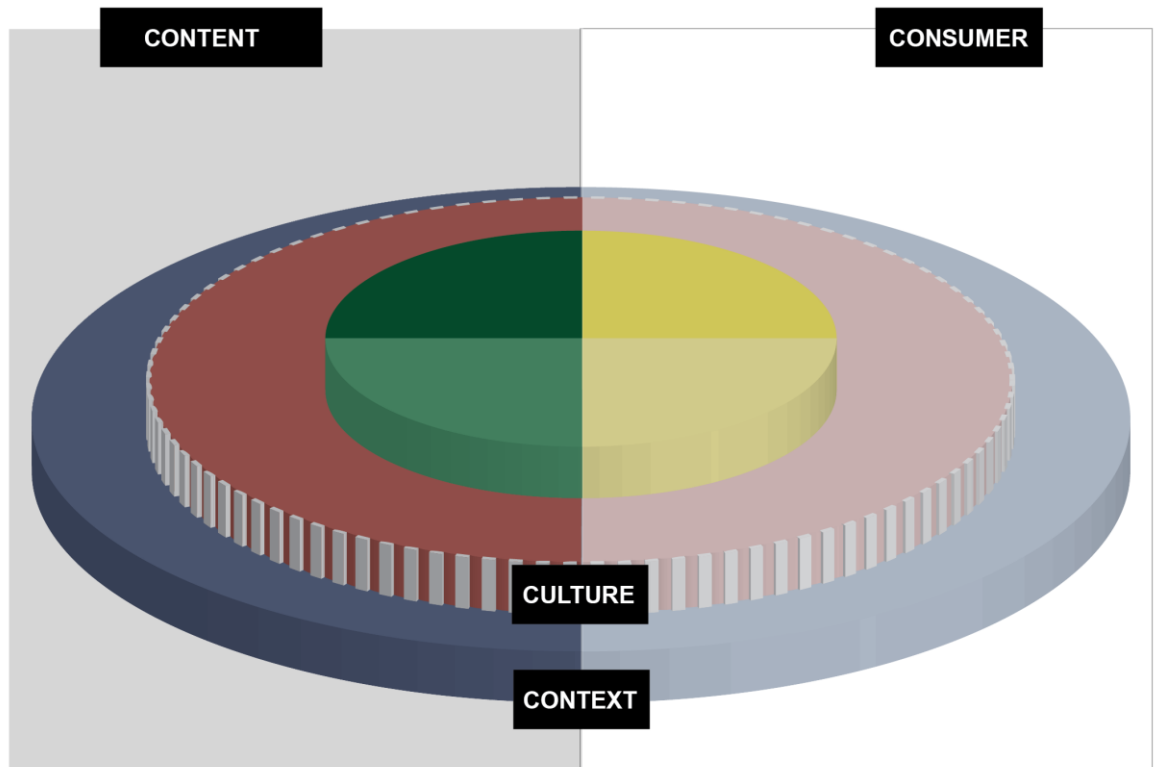
Figure 5-6 3D visualisation of the CAKE framework
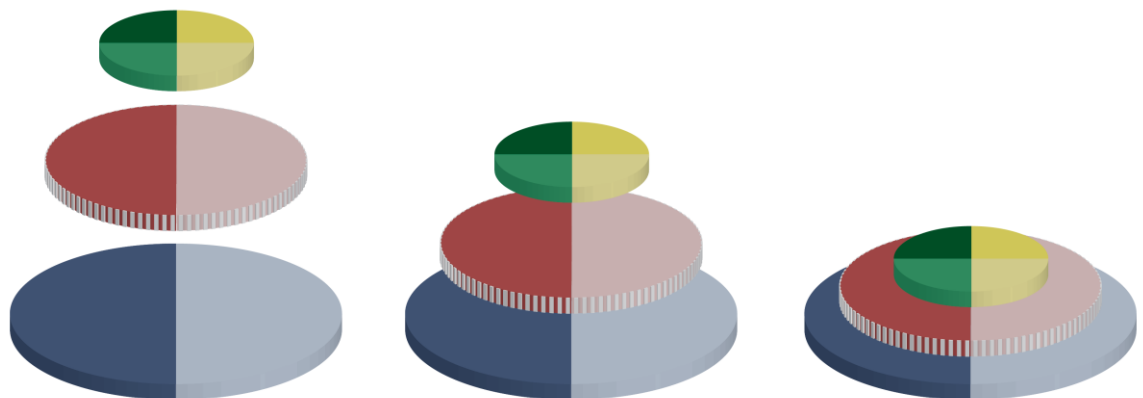
Figure 5-7 The 3D version of the CAKE in detail

What is known in the literature of cross-cultural HCI is that cultural variations in a game usually occur at the visual level, with different representations of colours, fonts, avatars and backgrounds. Thus, it is possible to expect that variations around visuals could evoke variations in consumer behaviour (see Table 5-6).

The implications of the CAKE framework are:

- The combination of cross-cultural HCI theories and cross-cultural consumer behaviour

- The mapping of advergame elements and components that represent culture, context and content

The conceptual framework for Advergaming Design across Cultures (CAKE) was generated from the literature review, following the research question: *What are the dimensions and components of the framework that integrates cross-cultural advergaming design and cross-cultural consumer behaviour?* This research question reinforces the development of the CAKE framework. Briefly, the CAKE framework is composed of 4Cs: culture, content, context and consumer. The CAKE framework offers a holistic and generic framework, composed of advergame design elements and consumers' attitudes (e.g. psychological aspects, behavioural outcomes) across cultures. Each "C" was expanded into components (Figure 5-5). However, in order to validate the CAKE framework, it is necessary to contextualise and ground the layers, components and elements of the framework in a cross-cultural scenario. The next stage is contextualising the CAKE framework through a cross-cultural comparison.

5.3   Summary

The CAKE framework (*The framework for Advergaming Design across Cultures*) originated from theories of cross-cultural HCI, cross-cultural consumer behaviour and advergame effectiveness. Based on aspects such as cultural representations, attitudes towards the brand, cultural values and dimensions, advergame interface design, advergame structure, advergame experience, the theme of the advergame and national factors, the CAKE framework was divided into 4Cs that are interrelated: culture, content, context and consumer.

The main research question supported by the CAKE framework is:

> *RQ1: What are the dimensions and components of the framework that integrates cross-cultural advergaming design and cross-cultural consumer behaviour?*

The main research question of this thesis reinforces the development of the CAKE framework. The CAKE framework offers a holistic and generic framework, composed of advergame design elements and consumers' attitudes (e.g. psychological aspects, behavioural outcomes) across cultures. Each "C" was expanded into components (Figure 5-5). The next stage is contextualising the CAKE framework through a cross-cultural comparison. Chapter 6 expands the application of the CAKE framework in terms of cultural dimensions, with the application of the framework's elements in two distinct cultures: Brazil and the UK.

Chapter 6: Brazil and the UK

The majority of the research across cultures usually draws comparisons between East and West (Bradley et al. 1994). However, this is not the main reason to support the comparison between Brazil and the UK. Thus, it is necessary to situate both cultures in terms of advergaming design and consumer behaviour, as explained in section 1.3.3, in the Introduction.

Considering this, the aim of this chapter is to:

- Explore the rationale for the comparison between Brazil and the UK
- Contextualise the CAKE framework introduced in Chapter 5
- Undertake a deeper literature review for Brazil and the UK, regarding the themes related to the CAKE framework
- Present a hybrid model of cultural dimensions that can be employed to study the cases of Brazil and the UK in the context of the CAKE framework

The CAKE framework was developed to understand advergaming design across cultures. The main aspects of the CAKE are culture, content, consumer and context. Thus, the elements that are analysed in this chapter are:

- The backgrounds of Brazil and the UK in terms of advertising and consumer behaviour (*Consumer layer*)
- An overview of Brazil and the UK in terms of games and media market in order to inform the research context (*Context and Content layers*)
- The cultural dimensions that support cultural values from Brazil and the UK (*Culture and Content layers*)
- Previous research in the field of cross-cultural advertising, cross-cultural consumer behaviour and cross-cultural HCI in Brazil and the UK (*Consumer, Content and Culture layers*)

Cross-cultural advertising, cross-cultural consumer behaviour and cross-cultural HCI are the representatives of the clusters 1 and 2 (see Figure 6-1), which help to guide the context of this research with regards to the CAKE framework.
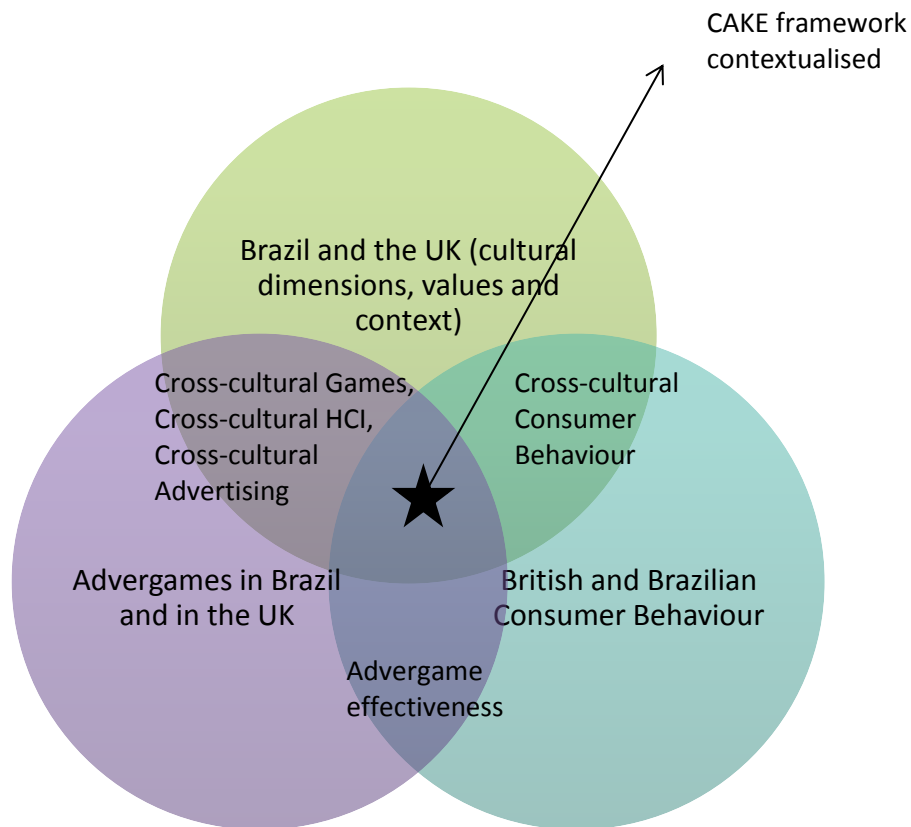
Figure 6-1 Interplay of Culture, Advergames and Consumer Behaviour in the context of Brazil
and the UK

The chapter structure starts, therefore, with cultural dimensions and values, followed by a
review of previous research and an overview of Brazilian and British contexts in terms of media
and advertising, consumer behaviour and digital games market.

6.1   Cultural dimensions and values

Brazil is full of contradictions, as a combination of European, African and Indigenous cultures,
with Catholicism and different religious dynamics, combined with the influence of Portugal
(Freyre 1956). This has a reflection in the Brazilian life, morals, economy and arts.

Considering Hall's dimensions (1981), Brazil is a high-context culture (Latin American). The UK
is has a lower score than Brazil in terms of context (Usunier 1998) (see Figure 6-2). This means
that the message for Latin Americans is implicit and depends on the context, while for the
British, this relationship could be slightly lower, being more direct and objective (Figure 6-2).

High-context cultures → Japanese

Arabic

Latin American

Italian

English

French

North American

Low-context cultures

Scandinavian (except Finland)

German

Swiss-German

Information implicitly received

Information explicitly conveyed
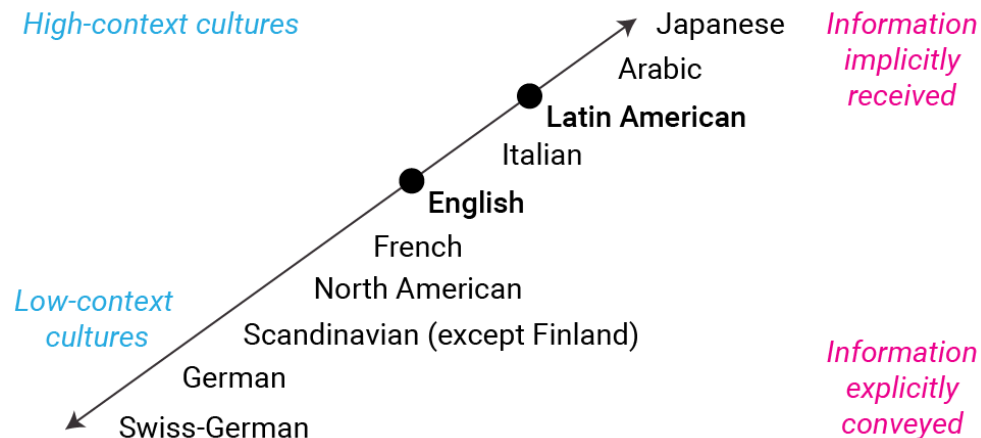
Figure 6-2 High-context and low-context cultures, adapted from Wurtz (2005) and Hall and Hall (1990)

Considering time, in Hall's dimensions (1981), Latin Americans are classified as Polychromic cultures, reflected in multitasking activities, whereas British are Monochromic, represented by a higher commitment to the job and doing one thing at a time.

Brazilians can be a very emotional people, guided by a "sentimental logic", which is complex and to a large extent based on spiritual issues (Azevedo 1971, p. 120), a factor that can be related to Hall's dimension of context (1981). On the other hand, English native speakers tend to be very direct, following an inductive approach of rhetoric, if compared to Oriental and Russians for example (Kaplan 1966).

According to Hofstede's (2001; 2011) dimensions, Brazil and the UK differ considerably in specific aspects like individualism, power distance and uncertainty avoidance (see Figure 6-3). This characterises Brazil as a culture that combines hierarchical values with rules and laws, respecting a strong relationship within groups and family, but which is not comfortable with future aspects. On the other hand, based on Hofstede's dimensions, the UK is a culture that primarily focuses on the individual (high individualism, with a score of 89) and that suggests that the way to achieve happiness is related to personal achievement. However, according to Bandura (2002, p.276), the relationship of individualistic and collectivistic cultures could "disguise cultural diversity" within each culture, particularly in cultures such as those of Latin America.

The UK also scored very low in power distance and uncertainty avoidance, which means that British people believe that inequalities should be decreased and that the fact that the future is unpredictable does not have a negative connotation. However, although Brazil scored high in

uncertainty avoidance, Brazilians are likely to accept situations, not questioning their causes, and solving problems through improvisation (Torres & Dessen 2009). This could bring into question how accurate this dimension may be, in relation to Brazilians.

The UK and other English-speaking cultures can score high in affective autonomy and mastery, with low scores in harmony and embeddedness (Sagiv & Schwartz 2007). In fact, a high score in mastery also supports Hofstede's dimension of masculine-feminine, as the UK is a very masculine culture, reinforcing competition and personal achievements (Hofstede 2001; 2011).

According to Schwartz's Model (2006) (see Chapter 4), Brazil shows an inclination to harmony (related to environment protection and unity) and mastery (social recognition, own goals), whereas the UK is more disposed to egalitarianism (honesty, equally and social justice) and intellectual and affective autonomy (curiosity, creativity and freedom) (Smith et al. 2006) (see Figure 6-3). Additionally, the UK has a universalistic orientation, which means that people from those cultures expect that general rules and principles for behaviour need to be applied across more contexts, including friends and family (Watson 2008). Consistently, Schwartz (2006) argued about the structure of human values across cultures, which includes universalism, benevolence, conformity, tradition, security, power, achievement, hedonism, stimulation and self-direction (see Figure 6-3). Moreover, Schwartz (2012) classified his values by self-enhancement, openness to change, conservation and self-transcendence. Most of the values proposed by Schwartz (2006) match Hofstede's dimensions' (2001; 2011) descriptions, such as self-enhancement, self-transcendence and conservation for individualistic and collectivistic cultures and power distance and openness to change for uncertainty avoidance, for example. Thus, Figure 6-3 represents the comparison between Brazil and the UK and the most important cultural dimensions, with the compression of Schwartz's dimensions (2006) to each representative cultural dimension mentioned above. In order to address a more relevant set of dimensions with more apparent differences, the dimensions of long-term orientation and indulgence (from Hofstede) were not selected for the comparison between Brazil and the UK, as their scores were very similar. Trompenaars and Hampden-Turner's (1993) dimensions were not selected in the current research due to their similarity with those of other theorists and lack of information relating to the Brazil-UK pairing.
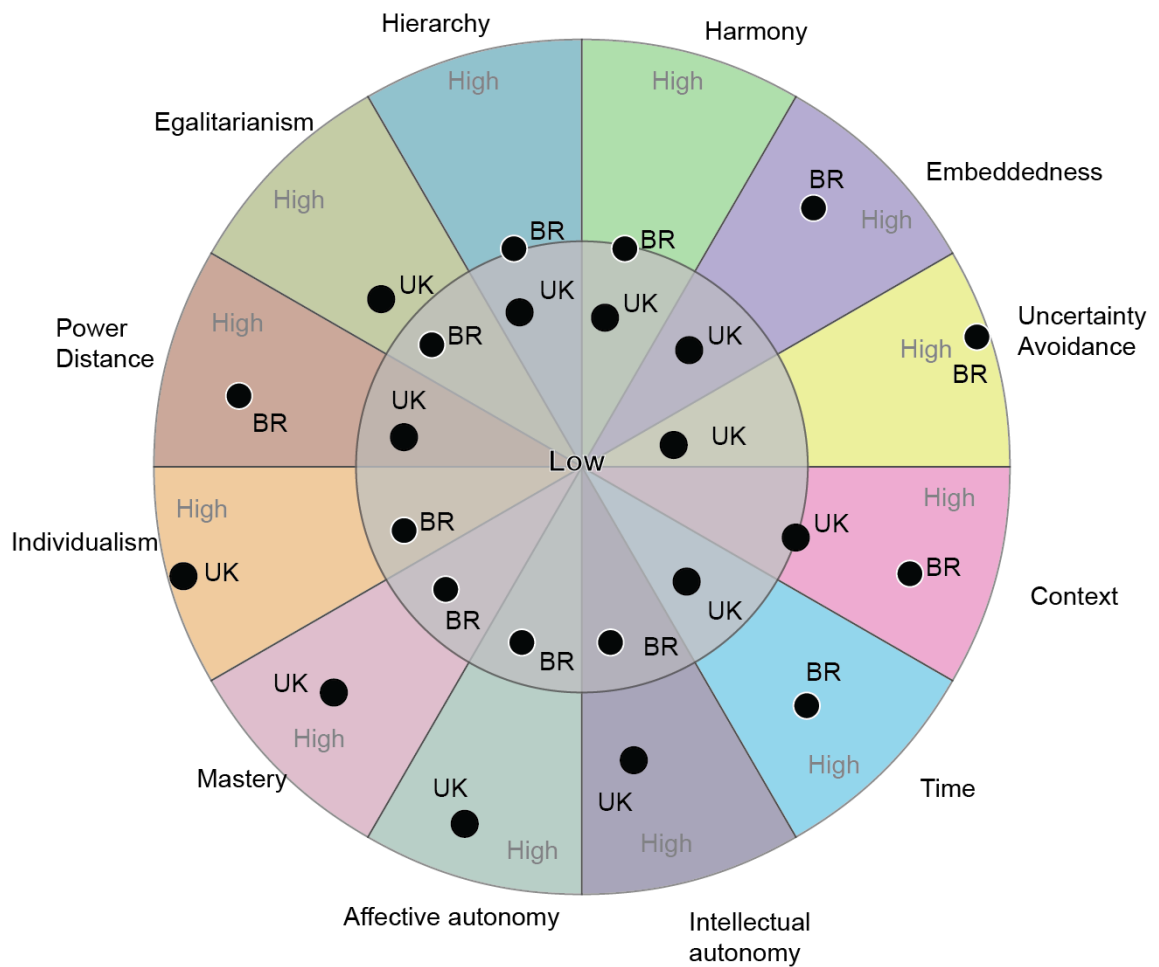
Figure 6-3 Representation of the relevant cultural dimensions in the context of Brazil and the UK, highlighting the dimensions of Hofstede (2001), Schwartz (2006) and Hall (1981)

Figure 6-3 shows that both countries can differ across social values and it is possible that those perspectives could influence the players' preferences and experiences while playing advergames. However, those aspects are considered as generalisations, which are borrowed from previous theories, such as Hofstede (2001), Hall (1981) and Schwartz (2006). Since Brazil is a multivariate culture, it is possible that some Brazilians do not follow the dimensions proposed by Hofstede (2001), Hall (1981) and Schwartz (2006). Therefore, it is necessary to address and contextualise Brazil and the UK separately in terms of national contexts. This is explained in the next section.

6.2   Cultural context

As ecological approaches in cross-cultural studies often analyse country indicators (van de Vijver 2003), it is crucial to analyse the cultural context in terms of the CAKE framework. Thus, for the analysis of the cultural context, a few aspects were examined:

- Country features (e.g. size, population) and economy
- Media and advertising
- Consumer behaviour
- Digital games market

6.2.1   Country features and economy

Brazil is one of the largest countries in the world, with a population of around 200 million, mostly concentrated in urban cities such as São Paulo and Rio de Janeiro (IBGE 2011). Regardless of the cultural uniformity, Brazil has a wide cultural diversity, characterised by European immigration, African slaves and native indigenous population, which contributed to highlighting the differences that exist among the Southeast, South, Northeast and North regions in the country (Torres & Dessen 2009).

Brazil is part of the BRICS: an association that started with Brazil, Russia, India and China and latterly South Africa, as emergent markets concerned with expansion in innovation and economic development (Cassiolato & Vitorino 2012). Compared to Brazil, the UK is considered an advanced economy (IMF 2012), with a population of around 63 million (World Bank 2014).

Although the Brazilian economy has become the world's seventh largest economy, it has slowed considerably from 2011 to 2012 (World Bank 2013). The country faces development challenges, particularly regarding agricultural growth, environmental protection and sustainability. Furthermore, regarding the business sector, Brazil is undergoing transformation, moving from a paternalist system to a free market, which could stimulate people to behave in a more collectivist way (Ettorre 1998).

Recent investments in Brazil such as the 2016 Olympic Games and the World Cup 2014 are transforming the way people interact with urban space and experience cultural identity. For example, in a report published by the Director of Google in Brazil, Fabio Coelho (Coelho 2012), mega-events could help emerging markets to grow, transforming the way people consume

media and entertainment. This aspect puts cities like Rio de Janeiro as the focus of the Brazilian transformation.

Marketing, design, innovation, tourism, the public sector and social-cultural changes are part of the legacy of events like these. For example, for the UK government, the Olympic Games' legacy is supported by sustainable actions, which can also help to enhance the idea of sports in order to eradicate social problems (Girginov 2011). This perspective highlights a similarity regarding the establishment of mega-events, such as Olympic Games and their impacts on the construction of the two cities involved: Rio de Janeiro (Southern Brazil) and London (Southern England).

6.2.2 Media and advertising

Creating advertisements in the UK could be a considerable challenge for marketers. According to Bradley, Hitchon and Thorson (1994), advertisers in the UK need to make their messages more subtle and entertaining, as the audience is slightly pessimistic, cynical and against hard-sell advertising (i.e. informational advertising, emphasising tangible product features). There is also a strong use of humour and satire in British advertising, with non-obvious strategies (Bradley et al. 1994). Consistently, Hatzithomas et al. (2011) argued that, in British advertising, humorous messages in adverts are seen as the least intrusive, if compared to the other cultures. Although humour is important in the British culture, however, British people have a neutral orientation regarding affective positioning, with not much demonstration of emotion or communicative encounters (Watson 2008).

Considering advertising, Latin America is moving from Americanisation to Globalisation, as a way to express the penetration of other cultures within Latin American markets (Sinclair 1996). This aspect may reflect the way advertising is designed, influencing consumer behaviour.

On the topic of advertising in mobile devices, people from both the UK and Brazil tend to accept adverts that can grant them access to free content (Nielsen 2013). This aspect shows that both Brazilians and British individuals tend to prefer advertisements that could give them something in return. However, in this scenario, Brazilians tend to tolerate and interact more with the mobile advert than British users do (Nielsen 2013). This characteristic shows that there is a strong difference between the acceptability of advertising in both cultures. It is possible that Brazilians are more tolerant regarding advertising messages; however, this favourable attitude might not be true in terms of trust. According to a report published by

Secom (2014), trust in advertisements in all media is very low among Brazilians. This aspect shows that even with the overall differences among the media utilised in Brazil, people do not trust advertising very often, and the differences between age, gender, family income and education do not have a strong influence on this behaviour (Secom 2014).

Considering the influence of TV, it is important to highlight that there is a strong influence of soap operas in Latin American markets, as a reflection of vernacular culture and often as a commercial vehicle for advertising (Sinclair 1996). In fact, TV has a strong presence in the Brazilian's lives (65% of people watch TV every day, with 80% for journalism programmes and 48% of the audience for soap operas), in conjunction with the growth of Internet access through mobile phones (Secom 2014). In addition, mobile phones in Brazil outnumbered the total population (Oliven & Pinheiro-Machado 2012). In 2016, 83.7 million of Brazilians used Internet via mobile phones (eMarketer 2016); this aspect suggests that strategies involving mobile advertising are promising in Brazil.

6.2.3 Consumer behaviour

There is a transformation in consumer behaviour in Brazil. Social classes in Brazil are classified according to a criterion that puts higher and lower classes in different groups (Abep 2014). In this scenario, lower and higher classes have different desires for products. For example, lower classes would like to go to restaurants, whereas higher classes wish to travel more (SPC Brasil 2015). This aspect reflects the on-going process of change in the country and in Brazilian consumer behaviour in general, which could be one consequence of the advances in the economy and public policies, encouraging greater income distribution (Oliven & Pinheiro-Machado 2012). For lower classes, it could be a way to express citizenship and social inclusion.

Considering brand attitudes, in Brazil, 42% of people would care if the brands disappear and 76% think that large companies should be actively involved in solving social and environmental problems (Havas Media 2013). In addition, 65% of Brazilian people consider the impact of a brand on well-being when they decided to buy a product (Havas Media 2013). Consistently, according to a report published by the website TrendWatching (2014), there is an inclination of Brazilians to become more interested in social projects, through storytelling and innovations that could blur the line between consumerism and social value. In fact, the Brazilian young generation is more concerned about responsible consumption (BOX1824 2011).

Moreover, technological brands are becoming more meaningful as they help people to connect and socialise with others (Havas Media 2013). However, social aspects can be different as Brazilians separate acquaintance friends from close friends (Smith et al. 2006). This aspect can also imply a variation in the way Brazilians perceive social relationships. For example, in some Latin American countries, personal relationships are viewed as integral to business and there is some difference in personal space as some Latin American men are much more likely to embrace each other than is the case among British men (Watson 2008).

Considering ways individuals from different cultures perceive conflicts, if compared to Americans, Brazilians preferred a non-competitive way to manage conflict in order to maintain the group harmony, reflecting the collectivist cultural feature of Brazil (Pearson & Stephan 1998). Although this aspect is not related to the context of gameplay, those principles could be considered or analysed in game studies, with the aim to understand how people from different cultures perceive challenges or compete against others within the game.

With the improvement of the British economy in 2014, the market of luxury brands increased considerably, through the popularity of luxury shopping tourism in London, boosted by Middle Eastern tourists and the democratisation of luxury goods (Euromonitor 2014). This shows the importance of consumer behaviour in the development of the British economy, particularly through the consumption by tourists.

Considering brand attitudes, in the UK, there is a disconnection between people and brands, as 93% of British people would not care if the brands disappear and only 5% think that brands improve people's quality of life (Havas Media 2013). However, categories of brands like information technology are related to the connection of British people to the world, family, friends and well-being; which indicates that emotional attachment is relatively strong for the British consumers (Havas Media 2013). In the UK, according to a report by Google and Ipsos (2012), 55% of people use their mobile phones while watching TV and 95% use their phones to research products.

Table 6-1 Summary of secondary data comparison between Brazil and the UK

	Brazil	UK
Cultural characteristics	Combination of cultures, including Catholic values (Freyre 1956); cultural diversity; moving from paternalist to collectivist (Ettorre 1998)	Not much affection or emotion demonstration in communications (Watson 2008); Humour is important (Bradley et al. 1994; Hatzithomas et al. 2011)
Country and economy	Population size: 200 million, concentrated in urban cities (IBGE 2011); Part of the BRICS (Cassiolato & Vitorino 2012); seventh economy (World Bank 2013); Host of mega-events, reinforcing public sector	Advanced economy (IMF, 2012); Population: 63 million (World Bank 2014); British advertising is highly regulated (Fletcher 2008)
Media and Advertising	Brazilians empathise with social media (Coelho 2012); Moving from Americanisation to Globalisation (Sinclair 1996); Interested in advertising with free content (Nielsen 2013); Low trust in advertising (Secom 2014); Soap opera influence (Sinclair 1996); TV presence: 65% watch TV everyday (Secom 2014); Mobile phones outnumbered the population (Oliven & Pinheiro-Machado 2012)	Low advertising tolerance (Nielsen 2013); Pessimistic, cynical and against hard-sell advertising, prefer humour and satire (Bradley, et al. 1994); Humorous advertising is less intrusive (Hatzithomas et al. 2011); 55% use mobile phones while watching TV (Google & Ipsos 2012)
Consumer Behaviour	Young generation (18-24) concerned about responsible consumption (BOX1824 2011); Different classes have different desires (SPC 2015); 42% of Brazilians would care if brands disappear (Havas Media 2013); Separate acquaintances from close friends (Smith et al. 2006); Less personal space (Watson 2008); Group harmony (Pearson & Stephan 1998)	Luxury brands and shopping in London is big (Euromonitor 2014); Social media, web search and email influences (Think with Google, 2012); 93% would not care if brands disappear (Havas Media 2013)
Digital games market	Gamers are from higher classes and Southern Brazil (IBOPE 2012); 35% of game segment is in LATAM (SuperData 2014); 48.8 million gamers (NewZoo 2013a); 84% mobile users are 16-34 years old (Nielsen 2013); Game companies are situated in South/Southern Brazil (BNDES 2014)	34.7 million gamers (NewZoo 2013b); Console gaming popularity (NewZoo 2013b); Gamers' ages are 25-34 years old (comScore 2013); Companies are around South England (Mateos-Garcia et al. 2014); Games industry is worth £1.72 million (Curtis 2014)

6.2.4   Digital games market

Latin America has a very significant digital market, with 43% of the revenue from mobile games and Brazil is one of the largest Latin American countries, with 35% of the game segment (SuperData 2014). This aspect shows that Brazil has a strong presence in the game industry, particularly regarding mobile games. For example, Brazil has 48.8 million gamers, with 45.2 million playing social or casual games, and 25.8 million playing games through smartphones (Newzoo 2013a). In addition, most Brazilian gamers are from the higher classes and from Southern Brazil (IBOPE 2012). Research published in 2015 found that that the most preferred genres among Brazilians were adventure and shooting games (Camargo & Pestalozzi 2015).

In the context of mobile usage, 84% of people in Brazil and 97% of people in UK are consumers between 16 and 34 years old (Nielsen, 2013). This aspect puts mobile consumers from both countries in the same group as the "Generation Y" (Weiler 2005) or "millennials" (Tapscott 2008), – represented by people that were born between 1980 and 1994 – which has grown up in front of computers, videogames and television.

The games industry in Brazil is growing, particularly for mobile and online games, with the companies situated in South and Southern Brazil (BNDES 2014). This aspect reflects one opportunity for the current research to help to develop the Brazilian games sector. However, although the market is in expansion, the Brazilian production does not seem to be particularly well structured, with a lack of specialists in the area of games design (BNDES 2014). Investments in advergames could be one way to increase the growth of the Brazilian games industry (BNDES 2014).

In the UK, the games industry has helped to boost the British creative economy (Mateos–Garcia et al. 2014). This aspect puts the study of games in the UK as a crucial strategy to increase investments and education in the field of game design.

In the UK, there are 34.7 million gamers, with 27.7 million playing social or casual games, and 22.1 million playing games through smartphones (Newzoo 2013b). Curiously, the UK is famous for console game popularity with 71% of all gamers (Newzoo 2013b). This characteristic illustrates the video game culture and gameplay experience of game players in the UK.

Moreover, according to a report published by the company, comscore (2013), most of the British gamers play games in their living room, particularly while watching TV and most of them are aged 25-34 years old. This aspect shows a trend in the gameplay experience, particularly with the presence of the TV.

Considering the production of games in the UK, the perspective is that the video games industry is partly responsible for the British creative economy, with the main cluster of video games companies around the South of England (Mateos-Garcia et al. 2014). Consistently, the videogames industry is worth around £1.72 billion for the UK economy, particularly considering companies that design games for mobile platform (Curtis 2014).

Therefore, considering both Brazil and the UK, it is possible that there are differences in terms of contextual settings, such as economic growth and the maturity of the games industry. The main similarity is related to the age group of gamers and consumers from both countries, with a huge use of mobile phones and strong TV presence.

6.3   Previous research

The data presented in this section were gathered from governments, global research, newspapers and previous research published involving Brazil and the UK (e.g. academic journals and conference papers), combined with the themes analysed in this research:

- Cross-cultural advertising (*What has been analysed in advertising comparing Brazil/UK and other cultures?*)
- Cross-cultural design (*What has been analysed in design comparing Brazil/UK and other cultures?*)
- Cross-cultural games (*What has been analysed in games comparing Brazil/UK and other cultures?*)
- Cross-cultural HCI (*What has been analysed in HCI comparing Brazil/UK and other cultures?*)

Table 6-2 Previous research in cross-cultural advertising and cross-cultural HCI involving Brazil

Previous research involving Brazil		Cultures/Countries	Reference
Advertising	The advertisements' themes were different	Brazil and America	Tansey et al. (1990)
	Adverts in Brazil showed less female nudity in fashion magazines	Brazil, China, France, India, South Korea, Thailand and the USA	Nelson and Paek (2005)
	Europeans have more regulations regarding advertising	Europeans, Americans, Brazilian, Mexican and Canadian	Usunier and Lee (2005)
HCI	Cultural gaps and diversity can be solved through metaphors	Brazil, Mexico, Israel, America	Salgado, de Souza and Leitão (2009)

Consumer behaviour	Brazilians are more conscious about the brand and less hedonistic when buying mobile phones	Brazil, Japan, the USA	Leng and Botelho (2010)
	Latin American countries have similar brand loyalty and symbolic consumption	Brazil, Argentina, Chile, Colombia and Mexico	Gammarano, Filho and Filho (2012)
	Brazil was identified as a collective culture, respecting emotional judgement and symbolic consumption	Brazil and Australia	Torres and Allen (2009)

Previous research in cross-cultural advertising including Brazil and other countries has identified several notable aspects:

- Brazilians ascribe importance to advertisements' themes compared to Americans (Tansey et al. 1990)

- Local edition of print advertising and language are important, if compared to China, France, India, South Korea, Thailand and the USA (Nelson & Paek 2007)

- Particular attitudes of Europeans to American, Brazilian, Mexican and Canadian television channels, as a reflection of different perceptions of persuasive attempts (Usunier & Lee 2005)

Considering cross-cultural consumer behaviour in studies with Brazil, a few aspects can be highlighted:

- Brazilians are more loyal to brands, having a less hedonistic attitude while purchasing mobile phones, when compared to American and Japanese consumers (Leng & Botelho 2010)

- Brazilians, when compared to Australians, have more collectivistic values, influenced by emotional judgements and symbolic meaning, whereas Australians prefer the utility of the product rather than the emotional attachment (Torres & Allen 2009)

This means that cultural values and dimensions could explain an emotional attachment. Moreover, Brazilians tend to be very loyal to brands, particularly because specific brands represent social status and an individual's identity (Gammarano et al. 2012).

In the case of cross-cultural advertising and consumer behaviour in the UK, other aspects were identified:

- British humour has a crucial influence in advertising, if compared to America (Bradley et al. 1994) and Greece (Hatzithomas et al. 2011).

- Young British consumers from small families were keen to avoid TV advertising significantly, if compared to consumers from Chile and Turkey (Rojas-Méndez et al. 2009)
- British consumers are influenced by the country of origin (COI), brand familiarity, brand reputation and brand trust while consuming products from China (Laforet & Chen 2012)

Table 6-3 Previous research in cross-cultural advertising and cross-cultural HCI involving the UK

Previous research involving the UK		Cultures/Countries	Reference
Advertising	British utilise more humour than French do. British consumers want honest adverts	British and French	Whitelock and Rey (1998)
	Differences, particularly regarding humour and advertising approach (hard sell and soft sell)	British and Americans	Bradley, Hitchon and Thorson (1994)
	In the UK, family size and age influence advertising avoidance behaviour	UK, Chile and Turkey	Rojas-Mendez, Davies and Madran (2009)
	Utilisation of humour-dominant messages. Print advertising	British, Greek	Hatzithomas, Zotos and Boutsouki (2011)
HCI	Cultural dimensions and interface design	British, Malaysian, Dutch, American, Costa Rican, Japanese, Swedish, Belgium, German, Chinese	Marcus and Gould (2000)
	Cultural dimensions and interface design for websites. Tendency for symmetrical design	British, German, Greek	Burgmann, Kitchen and Williams (2006)
Consumer behaviour	British consumers prefer good design and quality. COI, brand familiarity, reputation and trust influence British consumers	China and the UK	Laforet and Chen (2012)

Those aspects reflect not only a characteristic of the British consumer, but a managerial problem in the British market. Moreover, from the perspective of the design of a product, British consumers value good design, quality and luxury brand image (Laforet & Chen 2012).

From the perspective of cross-cultural HCI studies, it was possible to outline that:

- The British follow Hofstede's (2001) dimensions of culture (e.g. individualistic and masculine) applied to interface design of websites (Marcus & Gould 2000); this was not analysed in Brazilian interfaces

- The British have a tendency for symmetrical interface design in websites (Burgmann et al. 2006)

- Application of conceptual metaphors and semiotics in Brazilian interface design (Salgado et al. 2009)

- Tendency of Brazilian researchers and designers to utilise semiotics and metaphors in the study of design

Although previous research included Brazil/UK and other countries, there is a lack of research comparing Brazil and the UK in advertising, HCI, consumer behaviour and design (Table 6-2 and Table 6-3). This opens an opportunity to employ the CAKE framework in order to compare those two cultures.

Brazil and the UK represent a strong pairing for comparison using the CAKE framework (see Table 6-1). First, there is a lack of research that compares those two countries in terms of cross-cultural HCI, advertising and consumer behaviour, which are the main theories that support the CAKE framework. Second, it is possible to expect variations in terms of cultural representations inside the advergame, particularly if considering a hybrid model of cultural dimensions.

It is also important to mention that the researcher has links and facilities to undertake the research in Brazil and in the UK, due to:

- The researcher being Brazilian and therefore understands the language and culture

- The researcher has been living in the UK since 2013, has visited the UK before and has family and friends in the UK (British); hence, the researcher is familiar with the British culture

For this reason, this has also influenced her decision to choose Brazil and in the UK. Limitations and discussions about her position in this scenario are carefully mentioned in Chapter 7.

The next chapter addresses the research strategy undertaken in order to ground the CAKE framework considering Brazilian and British cultural dimensions and country context.

6.4   Summary

As highlighted in this section, motivations and reasons to establish a comparison between the UK and Brazil are multiple and involve (see Table 6-1 for details):

- The opportunity to expand the relationship between the pair Brazil and the UK for cross-cultural comparisons, which has not been strongly explored

- The comparison between an emergent market and a developed market

- Gamers in both countries are from the same age group (16-34 years old)

- Brazil has the largest mobile games market in Latin America

- Brazil and the UK differ significantly in Hofstede's cultural dimensions (2001) such as individualism and collectivism, uncertainty avoidance and power distance

- Considering Hall's dimensions (1981), Brazil and the UK differ in context and time dimensions

- British humour is part of British TV advertising and an effective strategy

- Brazilian game designers are starting to get space in the global games market

The current comparison may help us to understand at least five points:

- Differences or similarities in game play preferences in advergames

- The comprehension of the message embedded in the advergame

- Attitudes towards the game and the message

- Behavioural intentions after playing the game

- Differences or similarities in advergame design

The consideration of cultural dimensions and the differences and similarities argued in this chapter support the choice of the UK and Brazil for this research. As highlighted by the literature review and cultural dimensions for both Brazil and the UK, it is possible that the design of games and attitudes towards advergames may differ across those two cultures. Those investigations take part in the next chapters.

Chapter 7:   Research design

The current chapter addresses the research strategy designed and employed in this thesis. The CAKE framework was designed in Chapter 5 composed of four layers (content, context, culture and consumer), as way to address RQ1 (*What are the dimensions and components of the framework that integrates cross-cultural advergaming design and cross-cultural consumer behaviour?*). Followed by the introduction of the CAKE framework, Chapter 6 explained and argued for a context in order to ground the CAKE framework. This approach was essential in order to validate and implement the CAKE framework. In order to design this research, it is necessary to introduce the research questions that guided the overall methodology. These are explained in the next subsection.

7.1   Research questions

Considering this, the main objective of the current chapter is to provide enough research guidelines and arguments for the validation and implementation of the CAKE framework in the context of Brazil and the UK. Thus, there are two stages in this research design: one, the validation of the framework, using Brazil and the UK as a context and two, the implementation and evaluation of the CAKE framework for Brazil and the UK. Each stage aims to tackle a different research question, which is expanded in the next subsections.

7.1.1   RQ2: What are the aspects of an advergame that could make people from Brazil and the UK have positive attitudes towards brands?

As highlighted in Chapter 6, Brazil and the UK have both differences and similarities in their cultural aspects. The design of the CAKE framework relies on the advergame design elements that have already been covered. Those are related to the advergame content, which reflects the advergame structure, brand representations and the advergame interface. As discussed, advergame design could reflect culture and, following the research conjecture that *advergames influence and embed cross-cultural consumer behaviour*, it is possible to expect that selected elements in advergame design would influence people from different cultures. Thus, it is possible to ask: *What are the aspects of the advergame that could make people from Brazil and the UK have positive attitudes towards brands?* Propositions related to this question reflect the differences in the advergame elements, such as cultural representations, brand

representations and advergame theme embedded by the advergame structure. Therefore, we may expect that *differences in advergame design elements would make people from different cultures have positive attitudes towards a brand.* After understanding the issues related to advergame design elements and the components that influence consumer behaviour, it is crucial to understand and measure the differences in consumers' responses (e.g. attitudes towards the brand and advergame experience) based on the elements related to advergame design. This aspect is addressed in the next research question.

7.1.2 RQ3: What is the connection between advergame design, advergame experience and consumer behaviour when comparing Brazil and the UK?

This research question investigates the implementation and evaluation of the CAKE framework, which should be conducted after stage 1 and after addressing RQ2. Understanding the connection of advergame design elements and people's responses is the key aspect of this research. As the research conjecture proposed that *advergames influence and embed cross-cultural consumer behaviour*, it is possible to ask: *What is the connection between advergame design, advergame experience and consumer behaviour when comparing Brazil and the UK?* This question suggests that elements inside the advergame build important connections with consumers that make them have favourable attitudes towards a brand and a more positive advergame experience. Thus, it is possible that if advergame design influences the advergame experience positively, then consumers may develop favourable attitudes towards the sponsored brand. The next subsections address the way this research could tackle the measurement of such connection.

7.1.2.1 RQ3a: What are the metrics of differences in consumer behaviour, advergame experience and advergame design when comparing Brazil and the UK?

RQ3 states that it is necessary to measure the influence of advergame design in cross-cultural consumer behaviour. For that, it is essential to create metrics that could help to measure such effects based on a map of advergame design elements across cultures. Thus, it is possible to ask: *What are the metrics of differences in consumer behaviour, advergame experience and advergame design across cultures?* As stated above, game experience and attitudes towards the brand are the two important elements that underpin cross-cultural consumer behaviour. Therefore, it is expected to measure those elements using the CAKE framework. For that, it was required to develop a set of metrics based on the elements from the CAKE framework.

This is explained in Chapter 11. The next research question outlines how metrics are employed.

7.1.2.2   RQ3b: *What is the instrument that could measure differences in consumer behaviour, advergame experience and advergame design when comparing Brazil and the UK?*

As stated in the previous section, metrics of the CAKE framework include advergame experience and attitudes towards the brand. Advergame experience can be split into flow experiences, arousal and game enjoyment. After underlining the metrics of the CAKE, it is necessary to employ those metrics in a case study or scenario. Thus, it is possible to ask: *What is the instrument that could measure differences in consumer behaviour, advergame experience and advergame design when comparing Brazil and the UK?* Considering this, an instrument to interrogate this aspect was designed and implemented – this is discussed in Chapter 12.

The next sections discuss the research design employed in this thesis in order to address the research questions presented in this chapter.

7.2   A cross-cultural approach

First, it is necessary to situate the current research design in terms of cross-cultural studies. Cross-cultural research aims to decrease non-explained differences and explore patterns and relationships among people (Øyen 1990). Hence, comparisons may give insights about this connection, which supports the idea of comparing both Brazil and the UK.

Cross-cultural psychology is a key factor in this thesis, since this research is about consumer behaviour and advergaming experience across cultures. Cross-cultural psychology is related to the study of psychological variables at the individual level and cultural, social, economic, ecological and biological variables at the community level (Kagitcibasi & Berry 1989). Those perspectives were already discussed in the previous chapter, while analysing cultural dimensions for both Brazil and the UK.

Second, before discussing any comparisons, it is important to highlight some points regarding the choice of only two countries. As critically stated by Cadogan (2010), the choice of two countries alone may be considered erroneous if not adequately explained, particularly in the

national-level study, as this may result in non-appropriated generalisations. Moreover, van de Vijver (2002) argued that cross-cultural studies involving a few countries could create problems of interpretation of differences, particularly if the study only includes cultural factors and overlooks contextual attempts.

On the contrary, considering the frequency with which different countries are used in cross-cultural studies, Sin et al. (1999) found that the majority of the research only studied two countries through comparisons. This shows that the comparison between two countries is a common approach in cross-cultural consumer behaviour research. Therefore, this does not decrease the value of the current comparison between Brazil and the UK.

In order to avoid possible mistakes, however, the current research focuses not only on psychological aspects but also on contextual factors, such as a country's economic wealth and background, history and institutions.

In order to be more thorough, this research also includes the creation of an advergame, which helps to avoid problems of bias involved in this comparison. This reinforces this research's value, protecting it from possible mistakes of cross-cultural studies, like artificial results and deformed stimuli (Ratner & Hui 2003).

Cross-national studies can be classified in four different study targets; these are object, unit of analysis, transnational, and context of study (Øyen 1990). In the case of this research, the goal of the investigation is to contextualise the study, reflected by the understanding of consumer behaviour in two different countries. Thus, object of study, unit of analysis and transnational approaches are not applicable in the current investigation, as the research focuses on advergames and consumer behaviour, utilising both countries as CONTEXT. Therefore, the approach that is adopted is the country as a context of study.

Another aspect that should be considered is the nature of the proposed comparison between Brazil and the UK. According to Ember (2009), research questions in this field can be allocated to four groups:

(1) Descriptive (related to the frequency of a phenomenon, characterised by "how" questions)

(2) Causal (associated to questions looking for "why")

(3) Consequential (questions about the effect of a trait, usually represented by "what")

(4) Non-directional relational (related to the investigation of two situations, related or otherwise, but without the association of cause-consequence)

Considering the research questions proposed in the previous chapter, the approach in this methodology involves the effect of advergaming design, as the questions are related to the investigation of advergames' elements and their influence on consumer behaviour. Moreover, the approach is *consequential* as the research questions aim to analyse the relationship between a well-executed cross-cultural advergame and consumer behaviour in two different countries, characterised by "what".

From the methodological perspective in cross-cultural studies, a few approaches could be undertaken (van de Vijver 2002; van de Vijver & Leung 1997):

(1) Contextual, involving variables as participant characteristics or cultural features

(2) Exploratory and hypothesis-testing studies, involving the early stages of the research, with the possibility to identify both differences and similarities in different domains of a single study

(3) Structured-oriented and level-oriented approaches, involving specific aspects of differences across countries, usually followed by an analysis of similarity of structures, then by comparisons

Those three dimensions of cross-cultural studies can be combined to amplify the study to address eight possibilities, considering - or not - the implementation of contextual factors (van de Vijver & Leung 1997). The establishment of alternatives considering a contextual approach implies that this dimension has a significant impact in cross-cultural studies and should be analysed in detail. Table 7-3 shows the choice in this research.

As identified by van de Vijver and Leung (1997), a weak measurement of social context can negatively influence studies in cross-cultural psychology. This reinforces the strategy of the current research to investigate the relationship between cultural values and interactions among people from each chosen culture, which in turn supports the contextual approach argued previously.

Contextual approaches can be either exploratory and/or hypothesis-testing (van de Vijver & Leung 1997). According to van de Vijver (2002), cross-cultural studies usually start with exploratory orientation, followed by the hypothesis-testing approach. Thus, the present research involves both aspects, which are discussed later on in the document using

triangulation. In other words, the approach of this research follows a structured-level analysis of the literature review findings and the country data, avoiding assumptions that could be biased. After that, the research becomes more specific, entering into the level orientation, and providing data from people's responses and the advergames from both Brazilian and British markets. As the research proceeds, this approach becomes more detailed, culminating in the design of the advergame (see Figure 7-1).
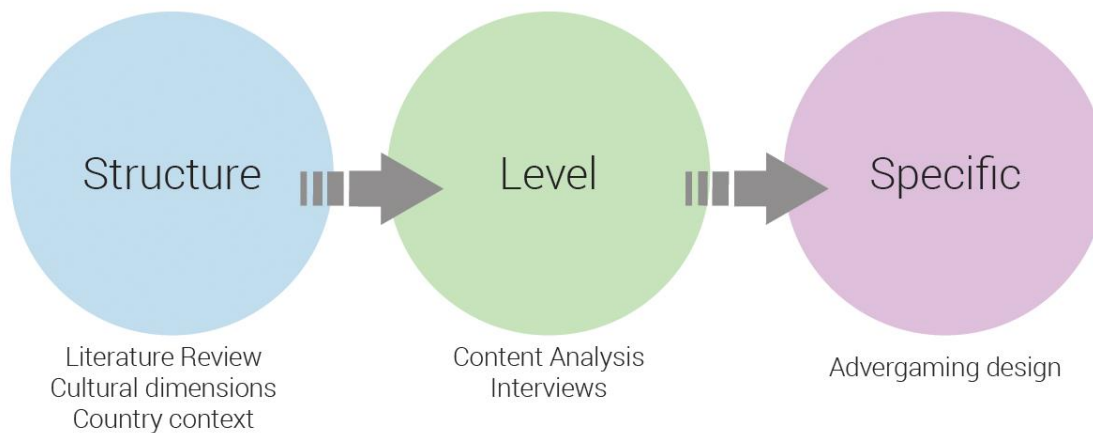
Figure 7-1 Levels of cross-cultural research

Before exploring the methods that were employed in this thesis, it is necessary to comprehend the paradigms evoked by cross-cultural research. There are two paradigms of concern relating to cross-cultural data: *emic* and *etic* distinctions of cultural variables. The emic (i.e. indigenous) component of social science research is related to the point of view of people native to a specific culture, avoiding the establishment of pre-concepts (Berry 2000) and including aspects of traditional beliefs from an insider's perspective (Morris et al. 1999).

On the side, the etic paradigm is related to the influence of a culture on an individual's perception (Brislin 1980) and can be defined as the outsider perspective, linking cultural influences to describe differences across cultures (Morris et al. 1999).

It is, however, important to mention that both emic and etic overviews of perspectives can be complementary, avoiding limitations and integrating norms and influences in cognition (Morris et al. 1999). Moreover, the integration of both approaches – emic and etic – means that misconceptions about comparisons between countries can be avoided (Brislin 1980). Therefore, it is necessary to recognise *both* perspectives of cultural studies in order to develop relevant research.

Another aspect that should be considered in cross-cultural investigations is the paradigm between similarities and differences across cultures. In cross-cultural studies, comparisons can accentuate both similarities and differences (Brislin 1980). This means that if the results show similarities, they would still be relevant.

7.3   Methodology

The discussion for the methodology chosen in this research is related to the application of the cross-cultural approach. As argued in the previous section, the study focuses on ecological and individual perspectives.

First, it is important to highlight the approaches utilised by previous studies in games in general, advergames, and culture. For example, Hernandez et al. (2004) investigated attitudes from Spanish speakers in the US, Mexico and Peru towards advergames through questionnaires. Similarly, Sensales and Greenfield (1995) investigated attitudes towards video games, comparing responses from Italy and the US using surveys. Consequently, both cited studies (Sensales & Greenfield 1995; Hernandez et al. 2004) utilised questionnaires. Thus, the employment of other research methods in cross-cultural studies in games could add more insights to the field. In the case of the current research, the methodology strategy is represented by a triangulation of qualitative data, quantitative data, and the literature review, the aim being to answer the research question regarding advergames' elements for cross-cultural consumer behaviour, through the definition of (see Figure 7-2):

(1) The conceptual framework for cross-cultural advergames (literature review) (Chapter 5:)

(2) Cultural dimensions and country characteristics from Brazil and the UK (Chapter 6:)

(3) The characteristics of the advergaming market in both countries (content analysis) (Chapter 8:)

(4) The perceptions and attitudes towards advergames in both countries (interviews) (Chapter 9:)
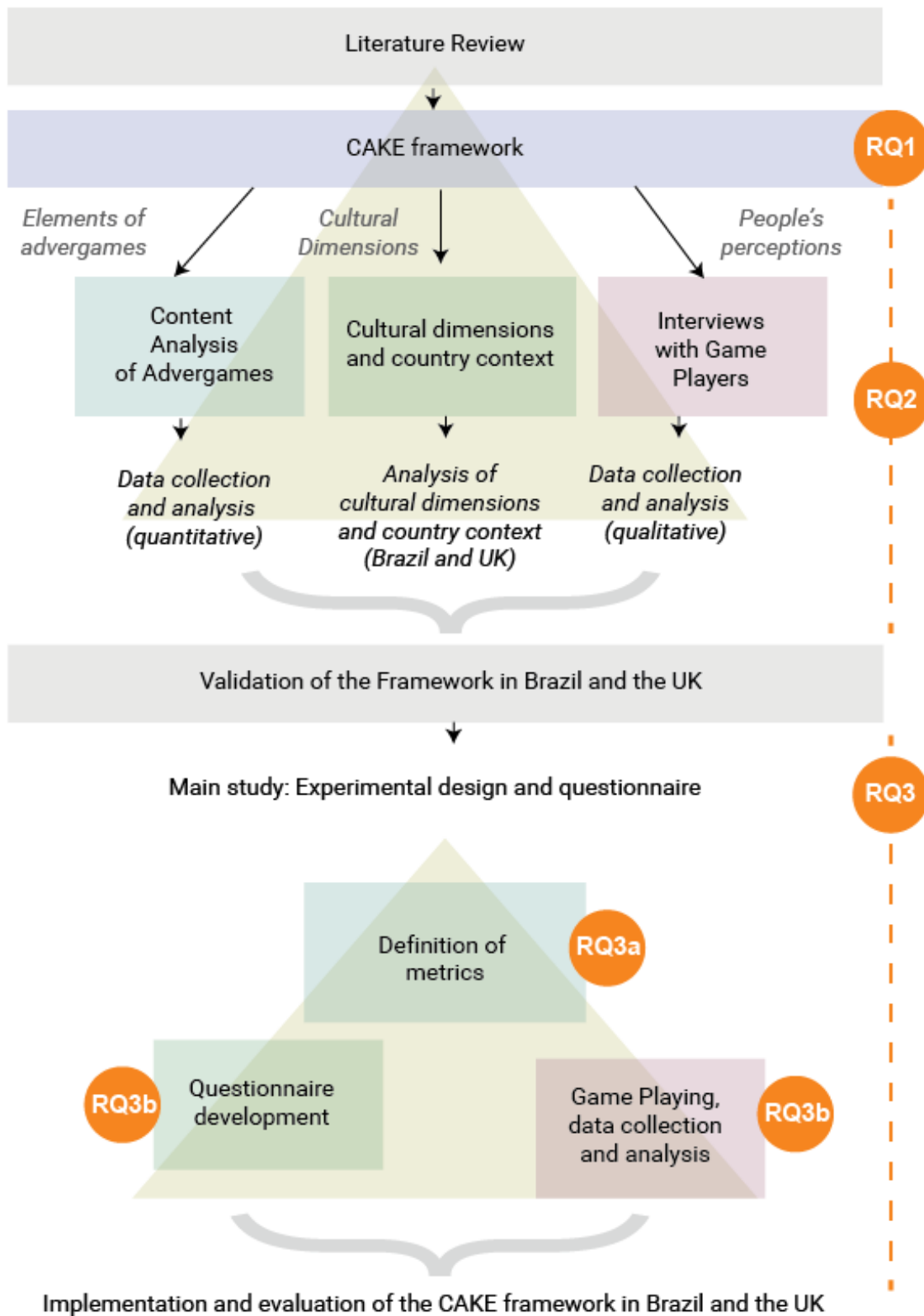
Figure 7-2 Illustration of the Methodology employed in this thesis and the research questions

7.4   Researcher bias

In research, particularly in aspects involving culture and people's opinion, it is important to deal with the researcher bias and assumptions that the researcher might have. As culture is an important element in this thesis, the researcher's intention was to use her experience to enhance the research, rather than introduce any cultural biases. Thus, it was important to consider a few points, such as:

a) The researcher is thirty-three-year old, Brazilian, born in Rio de Janeiro, Brazil. In 2013, the researcher has moved to Southampton, UK, in order to undertake a full-time PhD at the University of Southampton. Hence, the researcher is Brazilian and has been living in the UK since 2013.

Actions: a second coder has analysed the themes identified by the researcher in during the interview stage. Another researcher who speaks both languages (Brazilian Portuguese and English) has also translated the questionnaires designed by the researcher, in order to avoid any possible mistakes during the translation. The researcher has also employed the method of random and snowballing sampling during recruitment in social media groups that the researcher is not a member.

Advantages: the researcher knows both languages, is Brazilian and lives in the UK, which means that she has facility to access data. The researcher is also part of the targeted group, which could help to approach people easily.

Limitations: since the researcher has facility to access data, this could be limited to people that she knows and other assumptions due to her cultural background and age group.

b) The researcher has played videogames before in different platforms, particularly mobile games and online games, since the researcher do not own a console. Before this research, the researcher has not developed an advergame or had any previous experience playing advergames.

Actions: although this could influence this research, particularly in terms of platform choice, it is not the focus of this thesis to discuss the platform of the advergame itself, but its visual design elements. However, the researcher is aware that this could show a limitation, which could be addressed in future studies.

Advantages: the researcher is familiar with mobile games and online games, which could help the analysis of the advergames.

Limitations: the researcher has not developed an advergame before, which could have helped during the process of advergame design. The researcher has not played many console games before, which could have excluded a few advergames in this platform.

c) The researcher drinks coffee regularly, but is not an avid consumer of *Fairtrade* products. The researcher has a personal interest in sustainability.

Actions: although this could influence the choice of the sponsored brand for the advergame designed for this research, the researcher is aware that possibly other brands could have different impacts on the design of the advergame and brand familiarity. The researcher has chosen the *Fairtrade* brand, as coffee is a product known in both countries and sustainable consumption is moderated by cultural values. This could be a limitation since it is possible that other brands could have a different impact. However, this was not the focus of this research and the researcher points this as future work.

Advantages: since the researcher drinks coffee and is aware of the *Fairtrade* brand, she could have a facility to understand the characteristics of the product.

Limitations: the researcher's interests could have influenced the choice for *Fairtrade* coffee. However, this was not the focus of this thesis and the main argument for this choice was that sustainability is influenced by culture (Culiberg & Elgaaied-Gambier 2016) (and there are differences between Brazil and UK in this scenario, see Chapter 11 for more details) and *Fairtrade* is global (see more arguments in Chapter 11).

Considering those three points, the researcher declares that these aspects could have affected her position in this thesis. However, this does not underestimate the value of this research.

7.5   Research strategies

In this section, the strategy of this research is stated and the adopted methods are introduced, based on the research paradigm adopted in this thesis and the research questions posed in Chapter 5: (general questions) and the contextualised questions from Chapter 6:.

7.5.1 Qualitative and quantitative paradigms

Qualitative research particularly focuses on meaning making, involving small samples of people that could represent the population that is being investigated, through human-centred investigations (Keegan 2009).

The definition of qualitative research is related to the understanding of people's experiences, through the perception of the respondent, and can be considered as informal and variable (Robson & Foster 1989). For example, qualitative research is a good approach to collect stories through methods like ethnography, contextual inquiry, focus groups and interviews (Quesenbery & Brooks 2010). In the case of cross-cultural psychology research, qualitative methods may include observation, analysis of text and documents, interviews, recordings and focus groups (Berry 2002).

Quantitative research, on the other hand, is related to statistical and numerical measurement of data, usually collected by questionnaires and surveys (Keegan 2009), which can be analysed through statistical approaches, including comparisons or correlations (Morse 1991). Quantitative research can also be reflected in content analysis, which involves an objective, systematic and quantitative description of the content (Berelson 1952). This approach is mainly utilised in communication research. Moreover, the quantitative paradigm allows an objective orientation, avoiding the possible influence of researcher bias (Sale et al. 2002). In other words, qualitative methodology tends to be more oriented towards *discovery*, whereas the quantitative approach is related more to *justification* (Berry 2002).

The integration of both approaches can be illustrated by the application of mixed methods, combining both quantitative and qualitative approaches. This approach can help the researcher to answer questions that cannot be answered by either quantitative or qualitative research as a single method (Creswell & Clark 2011). For example, small-scale qualitative methods can be used in the early stages of the research in order to define people's attitudes and behaviours, thus helping to inform the research topics and questions for the main study (Keegan 2009).

7.5.2 Methods for cross-cultural studies

One way to collect cultural data is through ethnographic research, defined as the study of social interactions, including behaviours and perceptions that could arise in a group of people

or communities (Reeves et al. 2008) and it is usually tested in a real-life context through a holistic and inductive approach (Angrosino 2007). Although ethnography and comparisons are different, they are not contradictory, as they can inform each other (Ember 2009). The difference between ethnography and cross-cultural comparisons is that ethnography can enlighten the uniqueness in one particular culture, and comparisons can bring out what is general or what might be universal and variable (Ember 2009). However, ethnography is not the approach adopted in this research, for a few reasons:

(1) The approach of the methodology is mainly deductive, based on the literature review

(2) The aim of the research is to compare two cultures; this is not an immersive study

Before justifying the approach chosen in the present study, however, it is crucial to address a few points regarding ethnographic studies. Ethnographic study involves the immersion of the researcher in the field, as a participant (Atkinson & Hammersley 2007). This perspective changes the position of the researcher to a more active one. Although ethnography is one approach for studies involving culture (Berry 2002), this method was not applied in the current research. Reasons for this choice are:

(1) The researcher is Brazilian and therefore a native of one of the countries in the study

(2) The researcher is living in the UK and therefore is part of the cultural setting

(3) The propositions of this study are based on a literature review and not on primary ethnographic data

(4) This method could be expensive and it could take a long time to gather relevant data (Munroe et al. 1981)

(5) The purpose of the research is to provide a comparison, not to conduct an immersive study of each culture. If the purpose was a focus on one culture, it is possible that ethnography could be employed. However, this is not the case.

7.5.3 Triangulation and mixed-methods approach

Before discussing triangulation as the methodological approach in this research, it is essential to highlight the research paradigm that is represented in the current study.

According to Creswell and Clark (2011), four paradigms can be identified in research:

(1) Post-positivist: generally related to quantitative data, through theory verification, determination and critical realism

(2) Constructivist: often associated with qualitative data, focused on theory creation and wider understanding

(3) Participatory: shaped by political issues, more associated with qualitative approaches

(4) Pragmatic: related to consequences of research and multiple methods of data collection

As argued by Goulding (2005), paradigms utilised in consumer research were traditionally related to positivism, particularly during the 1950s. However, over time, this aspect changed. The necessity to understand the meaning of experiences for consumers brought to the scene the combination of positivism and interpretivist perspectives (Goulding 2005). Consistently, interpretivist and positivist approaches are blended through a mixed paradigm (Lapan et al. 2011). However, the difference could be related to the way the research questions are defined. For example, positivists tend to approach their research questions based on previous literature, whereas interpretivists define their research questions built around discussions about meanings, thoughts and activities (Lapan et al. 2011).

The approach of this thesis is partly positivist, as assumptions and questions are based on the review of the literature. However, there is also a discussion around meanings and thoughts, which makes this research POST-positivist and *not* just positivist. The researcher in this thesis assumes a position of a critical realist, recognising that reality can be studied and criticised.

Post-positivism tends to follow determinist and deductive points of view. However, this approach might not be enough on its own to identify people's perceptions. Moreover, although the literature review and previous studies across cultures could help the research make assumptions about the way people might feel about a specific topic, it is still necessary to investigate people's current perceptions. To achieve this, an inductive approach could also be applied. This is why the application of a mixed-methods approach in this research is conducted through a triangulation and convergent style.

The design of mixed-methods research includes at least one quantitative method and one qualitative method (Creswell & Clark 2011). Qualitative data can support a detailed consideration of a problem and quantitative data provide an overview of the problem (Creswell & Clark 2011). The use of multiple research techniques can promote a deep understanding of the investigation (Berg & Lune 2013) through a practical point of view, as the researcher combines inductive and deductive thinking (Creswell & Clark 2011).

Triangulation is a form of research strategy that utilises mixed through convergent validation (Jick 1979), combining data from quantitative research with those from qualitative research (Creswell 2014), thereby verifying and validating more than one source of data (Denzin 1978). Moreover, triangulation can uncover unique aspects of variations in the data that could be overlooked by single methods (Jick 1979; Plano Clark & Creswell 2008)

Although the research investigation is associated to a question that starts with "what", which means that the aim of the research question is to identify and validate the conceptual framework elements, the next combination of words in the question involves a cross-cultural comparison. For this reason, the triangulation approach is applicable for this research, as the convergent parallel design approach of research includes quantitative and qualitative data collection followed by a comparison or identifying of a relationship, and finally the interpretation of the analysis (Creswell & Clark 2011).

In this thesis, the triangulation of data was employed in the exploratory stage (see Figure 7-2). This could help to validate the elements of the CAKE framework.

The triangulation approach combined the following points (see Figure 7-3):

(1) Review of related literature

(2) Content analysis of mobile advergames from Brazil and the UK

(3) Interviews with individuals from both Brazil and the UK (game players)

The choice for each method is discussed in the next subsections.
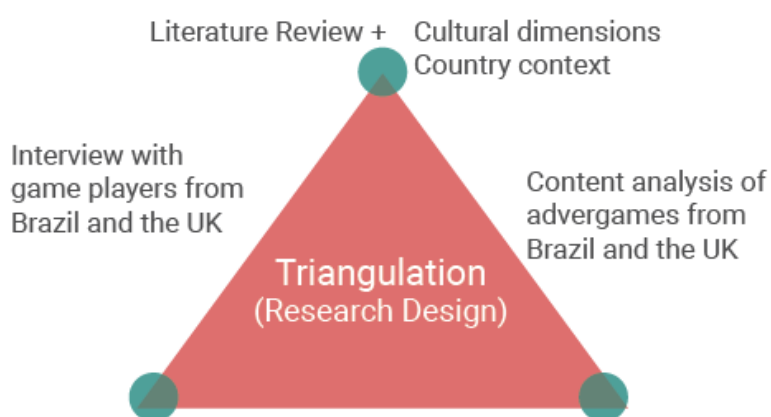
Figure 7-3 Triangulation of the Research Design in stage 1

For the stage following the exploratory study, an experiment was designed, in conjunction with the design of an advergame, the CAKE framework elements and the Brazil and UK

dimensions. This is represented by a case study. The triangulation in this stage works as a way to combine the elements of the CAKE framework (derived from the exploratory study), the metrics of the CAKE framework and the development of a questionnaire (CAKEQ), followed by gameplay and questionnaire implementation. The details of this process are explored in the next subsections.

7.5.4   Stage 1: Content analysis

Most of the methods applied in cross-cultural advertising have been classified as content analysis, survey, experiments, secondary data and qualitative methods (Taylor 2005). Consistently, Sin, Cheung and Lee (1999) discovered that content analysis, surveys, experiments and focus groups were the most utilised research design approaches in advertising studies, with surveys being the most common method applied in the investigations. This aspect shows that some of the methods chosen in the present investigation are consistent with previous research (Sin et al. 1999; Taylor 2005).

Content analysis has been previously employed in studies of advergames for food products (Dahl et al. 2009; Lee et al., 2009; Paek et al. 2014) and advergames featuring different product categories (Lee & Youn 2008). The studies reflect a tendency to apply content analysis in advergames, as proof that this method is applicable for games and advertising. Moreover, content analysis is appropriate for comparative studies (Jewitt & Leeuwen 2001), reinforcing the choice of this method in the current study.

It is important to highlight that content analysis has been used to evaluate social and cultural changes in a particular society and it is usually employed for cross-cultural investigations in advertising (Khairullah & Khairullah 2003). This also reinforces the relevance of content analysis in this research.

Furthermore, content analysis can help in the evaluation of content performance considering the characteristics, causes and consequences of content, including its elements and formats (Berelson 1952), which offer crucial information about what is being developed in the current market in terms of advergame design.

Content analysis should be objective, systematic and quantitative, particularly regarding the analysis of content manifestation in communication studies (Berelson 1952). Thus, the investigation was conducted following specific criteria identified from the literature review,

including the analysis of the advergames elements (e.g. interface, content, context, storyline, and mechanics). The details of the coding sheet procedure are highlighted in Chapter 8: and Appendix C.

Considering the research question, the content analysis is applicable for this study as it can indicate a variation of communication style, characterised by a question that contains "how" or "what" in consumer behaviour and marketing studies (Kassarjian 1977). Moreover, content analysis can help in the evaluation of the performance of characteristics, causes and consequences of content, including its elements and formats, thereby revealing the purposes of the communication style (Berelson 1952).

From the cultural perspective, content analysis has been used to evaluate social and cultural changes in a particular society and it is usually employed for cross-cultural investigations in advertising (Khairullah & Khairullah 2003). Since this study involves the influence of advergame elements in cross-cultural consumer behaviour, this aspect makes content analysis an appropriate method for this research.

From the point of view of the CAKE framework, the content analysis could help to evaluate the advergame elements part of the CAKE, composed of brand representations, advergame interface, cultural representations and advergame theme, based on the structure of the advergame. For that, a coding sheet was developed.

7.5.4.1   Study design

This study took place in four phases:

(1) The selection and download of advergames, including screenshots
(2) The definition of categories, based on the literature review (Chapters 2, 3 and 4), the conceptual framework (Chapter 5) and the perspectives of Brazil and the UK (Chapter 6)
(3) The coding process of the advergames, using a coding sheet
(4) The analysis of the results, utilising the coding sheets that were later added in NVivo to facilitate the process

NVivo is a software that can be used to help researchers to categorise, analyse and organise datasets, which can be from written documents like interview's transcriptions, to images, videos and other categories. This software is a highly recognised and helpful tool for the research analysis (Silver & Lewins 2014) but the researcher needs to code the data and choose

the type of analysis that is relevant for the research. In the case of the content analysis, NVivo was adopted in order to quantify the coding categories and assist on the visualisation of the frequency analysis of the content.

Since content analysis is an objective, systematic and quantitative process, related to the analysis of content manifestation in communication studies (Berelson 1952), the definition of the categories follows specific criteria defined by the CAKE framework. This is expanded in the next section.

7.5.4.2 Sample

In Brazil, 58% of people play mobile games (NewZoo 2013a). This shows that mobile games and interactions have surpassed traditional media, as more people use and interact with their mobile phones. Following the perspectives from Kassarjian (1977), the selection of representative sample is crucial for content analysis. Thus, the selection of mobile advergames is appropriate for this study as they represent the existing and emerging state of digital marketing communication not only in Brazil, but worldwide.

The advergames selected were gathered from the App Store from Apple iTunes. The rationale for the selection of mobile advergames in the iOS platform is related to:

(1) The iPhone (Apple product) has gained market share in Brazil and almost 80% of the Brazilian Apple users engage more with mobile apps (MediaCT & Google 2012)

(2) The same is the case in the UK, with 66% of iPhone users engaging with mobile applications and purchasing from mobile websites (Episerver 2014)

(3) Game creators prefer to produce games for the iPhone (Rigney 2013)

(4) In the UK, there is a growth of companies focused on iOS games, driving the video games sector (Mateos-Garcia et al. 2014)

The search for mobile advergames was conducted using the Apple Store data from each country, gathered from the website iTunes and downloaded by the researcher using a mobile phone. The selection process is explained in the following subsection.

7.5.4.3 Selection process

The choice of the advergames was defined by:

- Advergame popularity in each country, based on the list of popular games
- The representative number of games in the App Store

According to an article published by *Venturebeat* (Silverwood 2014), a website specialised in games, developers believe that popularity of apps in Apple is defined by downloads, engagement, sales and reviews. Thus, if the advergame is popular, more people might engage with it and it could give insights about advergame effectiveness.

According to the Forbes website (2013), in 2013 there were more than 180,000 games in the App Store, with the games category representing more than 18% of the apps. This number, however, is related to games and not advergames. Therefore, it could be very difficult to identify advergames within the games. Hence, the researcher has created a criterion in order to select a representative sample.

In the current research, 40 advergames were selected. Although this number represents only 0.02% of the total of games, it is important to highlight that no data about the actual number of mobile advergames in the App Store were found. Thus, in order to gather a representative sample, it was necessary to follow a set of specific criteria (see Figure 7-4**Error! Reference source not found.**):

    (1) All the games should feature a brand, service or idea, with the aim to convey an advertising message to the public

    (2) Advergames from Brazil: should be in Portuguese and/or Brazilian Portuguese and should at least be in the list of popular games

    (3) Advergames from the UK: should be in English and should at least be in the list of popular games

    (4) The numbers of selected games in both countries should be the same

The criteria also followed the advergame definition proposed in this thesis (see Chapter 1), which states that advergames are designed around a rhetorical message, usually related to a brand. Therefore, following this definition (see Chapter 1), the researcher has selected the advergames for this content analysis.

In the case of the sample selection, the level of persuasion knowledge of the researcher also influenced the aim of the advergame. Thus, for the researcher, it was crucial to follow the definition of the advergame, the identification of the brand itself and the identification of the persuasive content.

To achieve this, a search was conducted in the popular list of games in the App Store and in the other pages of iTunes. There are at least 240 games featured in the popular list of games;

however, the number of advergames in this list varies. At the time of this study, only 12 advergames were in this list.

For the other pages, brand names were researched, following the first letter of the name. In iTunes, the games are categorised alphabetically, from A to Z. Thus, for example, one advergame created for Coca-Cola would be under the letter C page. At least 20 to 40 pages for each letter were searched. Global brands, according to the ranking from Interbrand (2014), such as *Coca-Cola*, *McDonald's*, *Honda*, *Toyota*, for example, were also researched in the iTunes store.

It is important to mention that a few identified advergames featured movies, like *Minion Rush*, from *Despicable Me* or *Hobbit: Kingdom of Middle Earth*, from the movie *Hobbit*. Particularly the *Hobbit: Kingdom of Middle Earth* had characters with the same attributes from the actors of the movie. Although discussions could arise in terms of advergames or games, it is crucial to mention that the criteria for this selection followed the definition of advergames.

Following this process, 40 advergames (n=40) were selected (20 from Brazil and 20 from the UK) (see Figure 7-4).

The mobile advergames were tested using an iPhone 4S mobile device equipped with Wi-Fi, under the conditions of the UK broadband, and indoors (the games were not tested outdoors). Those aspects did not create a limitation for this research, as the aim of the content analysis was to identify the level of message integration through the manipulation of advergames elements. The effectiveness of mobile technology, 3G, Internet connection, time of download or influence of external effects are not being investigated in this study.
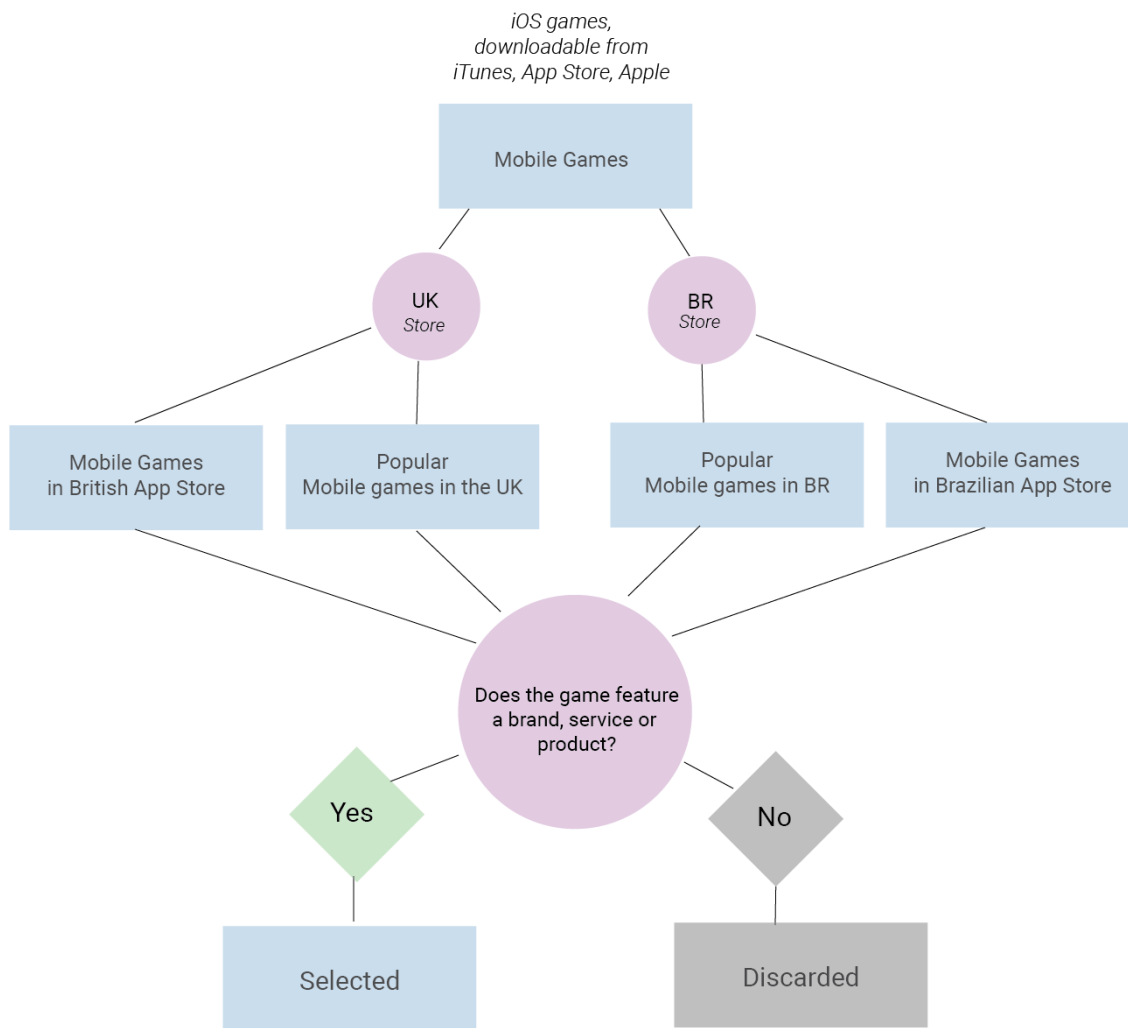
Figure 7-4 Selection process for the representative sample of mobile advergames

7.5.5 Stage 1: Interview with game players

According to Robson and Foster (1989), individual interviews can be more appropriate than group methods because:

(1) Some people feel happier answering alone, rather than being with strangers

(2) They are more effective than group situations as it is possible to keep track of an individual's responses with greater accuracy

Interviews can allow the participants to feel free to express their opinions in detail, without worrying about the group point of view (Kaplowitz & Hoehn 2001).

In order to understand the type of interview that was utilised in this research, it is necessary to state the types of interviews that could be used. For any given interview, it could be structured as a standardised interview (formally structured, with no additional questions), a semi-

standardised interview (more or less structured, with more flexibility) or an non-standardised interview (not structured, with no order of questions or wording) (Berg & Lune 2013).

Two types of questions are addressed by interviews: open questions (general and flexible questions) or closed questions (specific questions, directing people's responses) (Henerson et al. 1987). In the case of this research, a mix of open and closed questions was employed along with the semi-structured approach, opening up space for people to respond.

Questions for interviews can also take direct or indirect approaches, meaning that the interview can direct attention to the issue or can be imprecise (Henerson et al. 1987). In this case, direct questions take a different approach from indirect questions. For example, direct questions are associated with "yes" or "no" answers, while indirect questions are related to the interviewees' opinions, attracting detailed responses (Kvale 1996). For this reason, the approach for this research is the indirect question, as it is necessary to understand people's opinions about advergames.

Interviews can be very time-consuming if they are too long (Berg & Lune 2013). Consequently, the aim of the interview stage in this research is to keep the interviews as short as possible. However, length can also be related to the type of question asked in the interview, through which the subject could provide detailed data (Berg & Lune 2013). For this reason, the questions need to be semi-structured, in order to provide insights about the investigation.

Interviews are applicable for this research as the second research question looks at differences in attitudes. Thus, as interviews are qualitative, this approach is suitable to gather data from people's perceptions.

From the point of view of the CAKE framework, the interviews with game players from both Brazil and the UK could help to evaluate the part of the CAKE related to the consumer, composed of attitudes, cultural values and advergame experiences. For that, a semi-structured interview was conducted with game players. The characteristics of the sample are described in the next section.

7.5.5.1   Interview sample and rationale

As specialists can be considered part of the audience because they know "what they do" and "how they do it" (Quesenbery & Brooks 2010, p. 57), game players can be considered experts in this context. Moreover, as the game players are also consumers who play advergames and

are part of the audience that the advergames are trying to target, it is crucial to comprehend their perspectives regarding advergaming design. For this reason, the subjects who were interviewed are game players from each of the case-study countries (Brazil and the UK).

The age group of the sample was 18 to 34 years old. Reasons for this choice are:

- 84% of mobile users in Brazil are between 16 and 34 years old
- 97% of mobile users in the UK are between 16 and 34 years old
- Connectivity and familiarity with video games
- Consumer average age in both countries
- Age group that is connected with and participates in social networks (Tapscott 2008)

7.5.5.2   Participants

The selection of game players was defined according to the objective of this research. In this scenario, game players can be considered "experts", as they know "what they do" and "how they do it" (Quesenbery & Brooks 2010, p. 57). The number of participants of the current research was 22 (n=22; 12 Brazilians, 10 British) (see Appendix D for more information about the participants). The reason for the choice of this number is the necessity to achieve data saturation and discover useful patterns for the improvement of the CAKE framework. In order to achieve homogeneity in qualitative research, the optimum number of participants is between ten and twelve, if the goal is to describe a shared belief or meaning (Guest 2006). Thus, the number of participants should be sufficient for the aims of this study.

Game players recruited were from Brazil (Southern Brazil, including Sao Paulo and Rio de Janeiro) and the UK (Southern England, including Southampton and London), aged between 18 and 34 years old. There were seven female and fourteen male respondents. The age range 18 to 34 years is the representative age of gamers in both countries (see Chapter 6).

It is important to highlight that it was not necessary to collect the same data from female and male respondents, as the aim of this research is not a comparison of gender. The main variable of the sample is related to cultural background, and not gender or different age group.

7.5.5.3   Process

The current study followed the procedure below:

(1) Elaboration of the questions based on the CAKE framework
(2) Creation of the ethics form

(3) Recruitment

(4) Conduction of semi-structured interviews through Skype and an audio recorder

(5) Transcriptions of the interviews in both languages

(6) Analysis of the transcriptions utilising NVivo, following a thematic analysis approach

It is important to mention that NVivo was adopted as a helpful tool in this research in order to deeply analyse the themes emerged from the thematic analysis, from a deductive and inductive points of view. NVivo has also a tool to help researchers to visualise their codes. In this study, the researcher has used NVivo to visualise the most common themes mentioned in the interviews through a word cloud.

The interviews were conducted utilising semi-structured questions. The role of the researcher while implementing a semi-structured interview is to prepare a list of predetermined questions, which are managed with the interviewees in a conversational manner, offering them a platform to give their opinions about the themes discussed (Longhurst 2016).

The interviews were designed with determined questions, featuring sections related to the advergames elements proposed by the CAKE framework (see Chapter 5). Perceptions about advergame preferences, localisation and the perception of the future of advergames (see **Error! Reference source not found.**) were also addressed. For every question, the participant was asked to situate the response in his/her own culture and lifestyle.

Table 7-1 Association between the CAKE Framework and the interview questions given to game players

CAKE features	Elements from the literature	Interview questions
Advergame structure	Influence of interface design, game mechanics, content design, storyline and/or context of play in the player's attitudes towards the advergame in the respondent's country	Do you think that there are game elements that could be manipulated to make advergames more effective for British/Brazilians? If so, which elements?
Advergame effectiveness/experience	Perceptions about motivational influences to play one advergame	What would make you play an advergame? And what do you think it would take to make

		British/Brazilian people play one advergame?
Cultural representations	Perceptions about localisation and advergames elements	Do you think that advergames that could incorporate cultural features could be more efficient than just one advergame for everyone around the world? What is your view in this?
Advergame effectiveness/experience	Individual motivations to play one advergame	As a player, what are the elements that draw your attention in one advergame?
External factors	Perceptions about the advergaming market in the context of the participants' countries	How do you see the future of advergames in the UK/Brazil?

7.5.5.4   Interview protocol and procedure

Participants were first sent an email, inviting them to be part of the research. A small explanation was sent to them and the interview was arranged through Skype.

The interview brief was composed of:
    (1) Interview aims and objectives
    (2) Consent form and explanation about data collection, including anonymous identification
    (3) Information about the expected length of the interview

Each question was introduced to the respondent and the researcher was able to ask other questions related to the theme in order to saturate the topic and collect examples of people's experiences.

Six main questions were asked, through an indirect approach (see **Error! Reference source not found.**). The interviews took between 15 and 45 minutes.

7.5.5.5   Recruitment

First, an invitation to take part of the research was emailed to the participants. They were informed about the following:
    (1) The aim of the research and the interview objective
    (2) The possible interview dates that the experiment will take place on

(3) The interview would be remote, so it was necessary to have a Skype account

(4) The interview would be audio-recorded, so they needed to accept the terms of the experiment, which could be through the consent form and/or through verbal agreement

(5) No personal data would be shared

(6) They needed to choose possible days and times that they could be interviewed

After receiving the confirmatory emails, the consent form together with the participant information sheet was emailed to the participants, who were then able to schedule a date and time for the interview.

7.5.5.6 Ethics

A document discussing ethical issues regarding this study was also sent to the respondents (**ERGO ID 11476**). They have received a consent form, informing them about the data collection and privacy protection about their personal data. The interviews were conducted after obtaining people's signatures of agreement.

7.5.5.7 Skype

The utilisation of Skype in this study is applicable as some of the participants were in different countries or cities and the participants could have flexibility in their availability to collaborate with the research.

Skype is essentially based on two-party video calls through direct P2P transmission through voice and video (Zhang et al. 2012). For this reason, it can be considered as a hybrid instrument, with both audio and video.

In the current experiment, Skype was used as a tool to interact with the participants through audio and instant messages. The audio data were recorded on the researcher's computer and destroyed after transcriptions.

7.5.5.8 Code reliability

For the translated content, a graduate student who was fluent in both Brazilian Portuguese and English evaluated the translation of the transcriptions. In addition, a second coder was employed in order to evaluate the coding utilised in this research, estimated by three samples of transcriptions in Brazilian Portuguese and three from British respondents.

7.5.5.9   Coding procedure

A thematic analysis was undertaken utilising the software NVivo. Thematic analysis is a fundamental method for qualitative analysis that provides the identification of patterns, which could come from theoretical frameworks or not (Braun & Clarke 2006). By definition, a "theme" is a pattern that has a relationship with the research question (Braun & Clarke 2006). Since the CAKE framework was based on elements from the literature, a pattern was expected. However, a thematic analysis tends to be flexible (Braun & Clarke 2006). Therefore, maintaining flexibility is important.

Thus, the research strategy employs a hybrid approach, represented by a deductive/theoretical analysis (themes derived from the literature review) and an inductive analysis (themes emerged from participants' discussions (Fereday & Muir-Cochrane 2006). This could also help to achieve data saturation.

The thematic analysis followed the components of the CAKE framework represented by:
(1) The identification of the advergames elements, represented by interface, mechanics, storyline and content including their level of importance in each culture
(2) The themes that could be related to advergame effectiveness, such as perceptions of what could motivate people to play advergames
(3) Attitudes towards localisation

The analysis of the transcriptions was undertaken in the official language of each country. The coding, text search and word frequency analysis were carried out in each language in order to provide as much meaning as possible to the findings.

7.5.6   Stage 2: Case study, experimental design and questionnaire

Case study research is utilised to investigate empirical inquiries in a real-life context (Yin 2013). From the design perspective, this approach involves the design of the advergames utilising the CAKE framework and testing it with targeted consumers from both Brazil and the UK. The investigation of different conditions between groups is both experimental and exploratory (Field 2013). As this stage involves the creation of an advergame, it was necessary to choose one brand to sponsor the game. The selection of a real brand is likely to make the game closer to a real-life context.

Case studies can incorporate both quantitative and qualitative methods. In terms of positivist approaches, experimental methods are part of case study methodology (Gillham 2010). Thus, as this research is post-positivist, this study can be considered as a case study design (see Figure 7-5).

Controlled designed experiments are part of experimental game design research. In controlled environments, the main objective relies on the measurement of variations in a set of parameters (Waern & Back 2015). As RQ3a argues for a set of metrics to evaluate differences and similarities of consumers' attitudes and behaviour, a controlled environment can facilitate this process. Thus, there is a strategic variation of factors within the game. In that case, the controlled variable is the <u>culture</u>. Therefore, the advergame was created to favour one culture (Brazilian) and it was tested with both Brazilians and British consumers. Figure 7-5 illustrates the overall process.

Furthermore, as RQ3 states, there is a need to measure the influence of advergame design elements in cross-cultural consumer behaviour. This suggests that the advergame should be strategically designed in order to measure the factors involved in visual familiarity. Thus, for the main study in this thesis, an advergame was created in order to function as a controlled stimulus. The creation of an advergame is necessary, particularly because:

- It allows the researcher to control the variables that are incorporated within the game
- It avoids prior gameplay experience as it is a "new" game that is not in the market

The created advergame was built using Semiotics to integrate symbols and graphics within the advergame interface. The details of this process are described in Chapter 11:. Several approaches could be undertaken to design the advergame. For example, Participatory Design (PD) has been employed in research cultural appropriation (Vasalou et al. 2014). This approach was referred to as "research through design" (Vasalou et al. 2014 p.270); however, it was not employed in the current research for a few reasons:

- The aim of this research is not to create a new design methodology
- This research is not analysing cultural appropriation
- This research is not investigating political issues
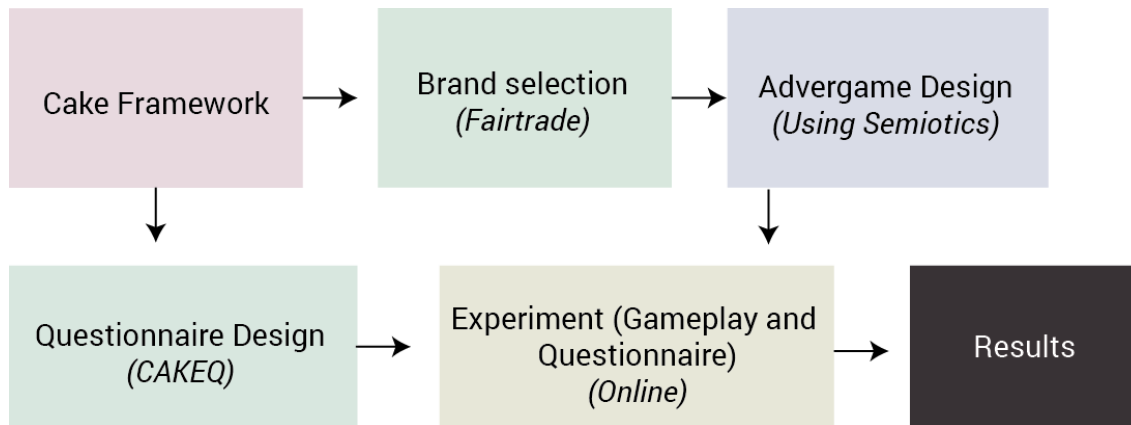
Figure 7-5 Case study Design

7.5.7 Stage 2: Questionnaire

Followed by the advergame design utilising semiotics, the advergame was tested in a controlled environment in which two groups (Brazilians and British) were introduced to one condition (play the advergame that was designed to favour Brazilians). Considering this, RQ3b argued for an instrument that could measure the relationship between advergame design, advergame experience and consumer behaviour while comparing Brazilian and British responses. This instrument was designed through a questionnaire composed of closed-ended questions and one open-ended question. As quantitative approaches are suitable for comparisons, the researcher has opted for closed-ended questions in the format of scales (Likert scale). The choices for a quantitative approach in this case were:

- Stage 1 was exploratory; hence stage 2 follows an evaluation of the CAKE framework
- After stage 1, hypotheses were developed in order to address RQ3
- An objective approach could help to quantify attitudes and measure the relationship between variables
- The case study was designed in a controlled environment through experimental design, which could benefit from controlled scales from the questionnaire, such as Likert-type scales
- This thesis focuses on a post-positivism paradigm, which argues that there are beliefs, assumptions and truths that could investigated by the researcher; hence a quantitative approach could be suitable in this stage

Although the choice for questionnaire design could encompass just closed-ended questions, there was the addition of an open-ended question at the end of the questionnaire. Reasons for this choice were:

- This thesis focuses on a post-positivism paradigm, which also implies that context is important in experimental settings
- Open-ended questions could help to give hints or suggestions of possible contextual aspects that could not be measured by the scales from the questionnaire

Details from the questionnaire design are set out in Chapter 11.

7.5.1   Experiment stages

In this section, the variables are discussed and associated with the hypotheses (see Figure 7-6). Null hypotheses are also included in order to follow the principles of hypothesis testing utilising statistical approaches. The idea behind this principle is that the Null Hypothesis Significance Testing (NHST) is the opposite of the alternative hypothesis (Field 2013). This means that in the null hypothesis the effect is non-existent. As this approach is a hypothesis testing utilising statistical analysis, it was necessary to define the null hypotheses for each of the hypotheses. The null hypotheses needed to be defined in order to prevent Type I and Type II errors (Field 2013). Therefore, in each of the following subsections, the null hypotheses are described.
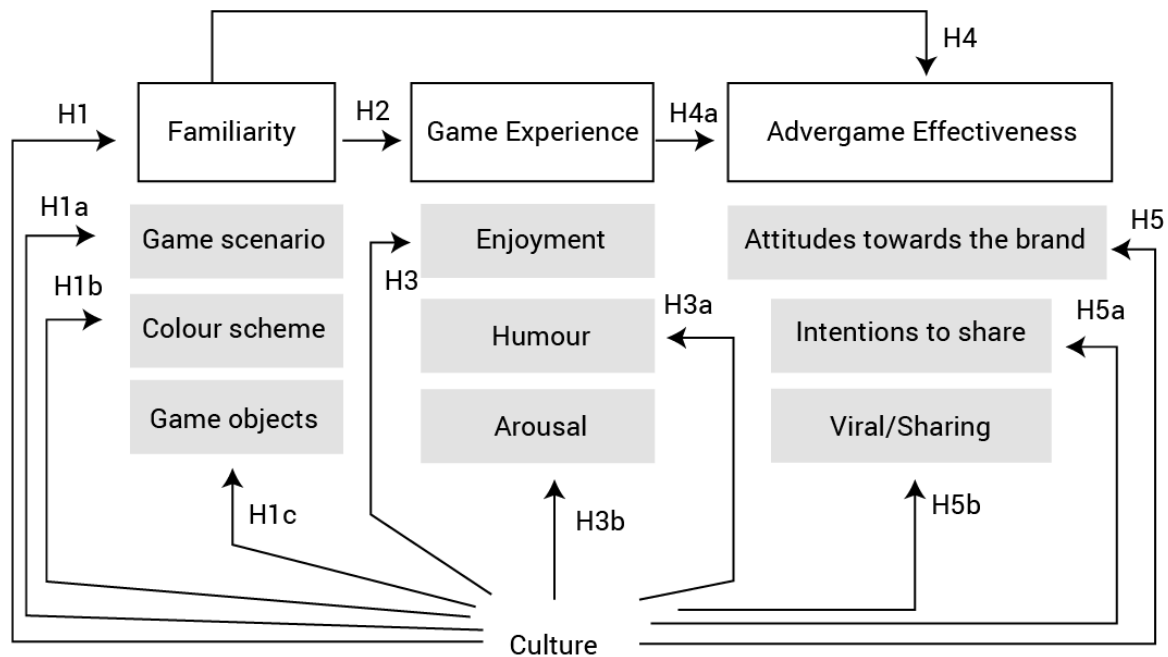
Figure 7-6 Model of hypothesised relationships

7.5.1.1 Level of familiarity

The dependent variable is the level of familiarity with some aspects of the advergame that were manipulated for Brazilians (colour scheme, scenario and game objects) and rules, narrative, brand and the game theme.

The independent variable is the cultural background from each participant (Brazilian or British). Brand familiarity can be also an independent variable.

Considering this, the hypotheses are:

> *H1: The level of familiarity with visual representations will be higher for Brazilians than for the British*
>
> *H1a: Brazilians will feel more familiar with the colour scheme than the British*
>
> *H1b: Brazilians will feel more familiar with the game scenario than the British*
>
> *H1c: Brazilians will feel more familiar with the game objects than the British*

The process of testing the hypotheses combines gameplay with the self-report questionnaire. The participants were invited to play the advergame for one minute and answer a questionnaire.

All the interaction took place online. The questionnaire had a CAKE scale of familiarity, composed of eight questions with a 7-point Likert-type scale. These eight questions are part of a 26-question survey.

The null hypotheses are:

H0: Brazilians and British will have the same level of familiarity with visual representations

H0a: Brazilians and British will have the same level of familiarity with the colour scheme

H0b: Brazilians and British will have the same level of familiarity with the game scenario

H0c: Brazilians and British will have the same level of familiarity with the game objects

A t-test was the statistical approach chosen to understand the variances in the answers between the two groups (Brazilians and British).

7.5.1.2   Level of gaming experience

The dependent variable is whether the participants enjoyed the game or not, represented by game enjoyment scale, arousal and humour.

The independent variable is the cultural background from each participant (Brazilian or British). Gaming experience can also be an independent variable.

Furthermore, in this experiment, it is expected that correlations between the level of familiarity and gaming experience will be measured. Therefore:

H2: A higher level of familiarity will lead to a higher level of gaming experience (positive correlation)

Considering that it is expected that Brazilians would have a positive familiarity, it is possible to expect that:

H3: Brazilians will enjoy the advergame more than the British

H3a: Brazilians will find the advergame funnier than the British

H3b: Brazilians will feel more aroused after playing the advergame than the British

The participants were invited to play the advergame for one minute and answer a questionnaire. All the interactions took place online. For each hypothesis there was a section with different questions (7-point Likert-type scale).

The null hypotheses are:

> *H0: Both Brazilians and British will enjoy the advergame*

> *H0a: Both Brazilians and British will find the game funny*

> *H0b: Brazilians and British will feel the same level of arousal after playing the advergame*

A t-test for each hypothesis was the statistical approach chosen to understand the variances in the answers between the two groups (Brazilians and British).

Correlations were also employed in order to understand if familiarity predicts gaming experience.

7.5.1.3 Level of advergame effectiveness

The dependent variable was the level of advergame effectiveness, represented by the attitudes towards the brand, intentions to share and clicks in the share button in the game.

The independent variable was the cultural background from each participant (Brazilian or British). Brand familiarity can be also an independent variable as it is a construct related to previous experiences with the brand that cannot be controlled by the researcher prior to the experiment.

Furthermore, it is expected that relationships between the level of familiarity and advergame effectiveness plus gaming experience and advergame effectiveness will be measured. Therefore:

> *H4: A higher level of familiarity will lead to a higher level of advergame effectiveness (positive correlation)*

> *H4a: A higher level of gaming experience will lead to a higher level of advergame effectiveness (positive correlation)*

Considering that it is expected that Brazilians would have a positive familiarity, it is possible to expect that:

H5: Brazilians will have more positive attitudes towards the brand than the British after playing the game

H5a: Brazilians will have more intentions to share the advergame than the British

H5b: Brazilians will share the advergame more than the British

The null hypotheses are:

H0: Brazilians and British will have the same level of attitude towards the brand after playing the game

H0a: Brazilians and British will have the same intentions to share the advergame

H0b: Brazilians and British will share (or not share) the advergame in the same way

A t-test for each hypothesis was the statistical approach chosen to understand the variances in the answers between the two groups (Brazilians and British).

Multiple regression was employed in order to understand whether familiarity and gaming experience predict advergaming effectiveness.

7.5.2   Experiment Design: *Colheita de Café* gameplay

In order to analyse the validity and reliability of the experiment, it was important to test for errors. Two types of errors could emerge in statistical hypotheses: Type I and Type II (Neyman & Pearson 1933). The Type I error is when the beliefs for effect in the population are true, whereas the Type II error is when there is an expectation for no effect in the population (Field 2013). In this experiment, Type 1 error was tested for, as the hypotheses imply an effect in the population. The Type II errors are the null hypotheses. The procedure is highlighted in the next section.

7.5.3   Statistical choice

The advergame was tested with two groups: Brazilians and British consumers. The age group of the sample was 18-35 years old, comprising both men and women.

In order to test for a Type I error rate, a convention of error probability was adopted. This value or the α-level is .05 or 5% (Field 2013). The Type II error is when there is an effect in the

population, when the prediction was actually false (Field 2013). In order to test for the Type II, a beta-level is conventionally employed as .2 of 20% (β-level = .2), following Field's (2013) guidelines. What Field states is that there is a relationship between α and β levels because, if the researcher believes that there is a low probability that an effect will be accepted in a population (lower α), then there is a high probability that the null hypothesis will be accepted (higher β) (Field 2013). The utilisation of such conventions is useful for researchers, as it provides a balance represented by a ratio of 4:1 (.20 to .005) when considering the two types (Cohen 1992, p.156).

In a context of Null Hypothesis Significance Testing (NHST), explained in section **Error! Reference source not found.**, the convention for p-value (probability of significance) is that if the p value is less than the alpha value (p < .05), then it is possible to say that the variation is significant (Field 2013); in other words, the null hypothesis is not strong enough, which means that it is possible to consider the alternative hypothesis, supporting a certain effect on the population. This procedure is also utilised in the context of t-tests.

The type of t-test chosen for the research is a one-tailed test, as the hypotheses are directional (e.g. *Brazilians will feel more familiar with the advergame than the British*). According to Field (2013), directional hypotheses are different from non-directional ones: the former is about the influence of one aspect and the latter is about one or another principle.

In order to understand statistical power, it is important to test the effects in the population. As mentioned by Field (2013), the power test is represented by $1 - β$. This means that it is assumed that there is an effect in the population (e.g. different cultures). As the convention of β is .2 (Field 2013), the expected power is .8 or 80%.

In statistics, effect can have three sizes: small (d = 0.2), medium (d = 0.5) and large (d = 0.8) (Cohen 1992). The Cohen's d is a representation of the differences between the means, divided by the standard deviation (i.e. noises in the data), and is usually employed in t-tests (Field 2013).

In order to understand the relationship between variables, a correlation analysis was employed. In this case, Pearson's correlation coefficient (r) was utilised in order to measure the relationship level between the variables (familiarity, game experience and advergame effectiveness). According to Field (2013), the correlation coefficient could have effect sizes, such as small (r=0.10), medium (r=0.30) and large (r=0.50), similar to the Cohen's effect size.

In order to test the impact of two variables on another, multiple regressions are utilised in non-linear situations, or when two or more variables might have an impact on another variable. This was the case with the influences of familiarity and gaming experience on advergame effectiveness. Different from the effect of familiarity on gaming experience, multiple regressions could analyse predictive factors of advergame effectiveness.

Table 7-2 Experiment design conditions vs. groups

	Group 1 (Brazilians)	Group 2 (British)
Condition 1: play CC advergame localised for Brazilians	familiar (*positive*) game experience (*positive*) advergame effectiveness	not familiar (*negative*) game experience (*negative*) advergame effectiveness

7.5.4   Procedure

While using G*Power (Faul et al. 2007) for two-tail t-tests, looking for differences between groups, the conventional levels are $\alpha=0.05$ and β-level = 0.2, with the desired power of 0.8 and d=0.8. An *a priori* test was undertaken utilising G*Power calculations and the required sample size was 26 people per group. However, the number of 30 per group could be more effective, as the CAKE framework has three factors (e.g. familiarity, game experience and advergame effectiveness), following the guidelines of Costello and Osborne (2005) for a proportion of 10:1 factor. The number 30 is also a suitable sample if considering the principles of the Central Limit Theorem, in order to provide enough data (Field 2013).

Sixty participants were invited to play the game and answer the questionnaire (30 Brazilians and 30 British), with 26 questions after gameplay and seven questions before (demographic, game experience and attitudes towards the brand), with 33 questions in total.

The participants were recruited online, through email and social media, and they were invited to play the game online. The questionnaire was also displayed online. The participants were able to indicate their consent for their data to be used in the research **(ERGO ID 18286)**. The whole procedure took around 10-15 minutes.

7.6   Translation and adaptation

Although selecting bilingual subjects and applying an instrument in one language could avoid the problem, this decision could influence the aspects of the investigation regarding the discovery of possible cultural differences (Osgood et al. 1975). This is the reason why translated instruments were utilised in the case study questionnaire and interview questions and answers. For both cases, the translation was determined by back-translation, which avoids any mistakes in translated instruments and materials. In addition, a pre-test was carried out with bilingual individuals to prevent mistakes (Osgood et al. 1975) in both cases.

7.7   Ethics

As the current research methodology involves human subjects, it was necessary to discuss ethical issues of data collection. In order to maintain the integrity of the study, the research questions should be very clear to the subjects involved in the investigation, particularly because their participation in the investigation is voluntary (Gregory 2003). This means that the experiments should be as open as possible to the individuals who are taking part in the research. Moreover, in order to guarantee people's rights and confidentiality, it is necessary to design a clear ethics document through notified voluntary consent on the part of the individuals involved in the investigation (Gregory 2003). Thus, for each study that involved human participants, a consent form was previously designed and presented to each individual, following the principles agreed by the ethics committee at the University of Southampton. ERGO IDs involved in this research are **ERGO ID (11476**) and **ERGO ID (18286)**.

7.8   Summary

The design of this study was defined according to the research questions and it involves the triangulation approach, conveyed by a selection of mixed methods. For the preliminary stage (stage 1), it includes literature review, interviews with game players and content analysis. The final stage (stage 2) includes a case study with advergaming design (e.g. experimental game design), questionnaire design and application of the questionnaire.

The choice of the methods was justified following the research questions (the methods not utilised in this research are illustrated in Table 7-3). The current study embraces a hypothesis-testing attitude with the exploratory method represented by the case study. The combination

of both approaches gives more value to this research. Moreover, the present research follows the guidelines of both emic and etic approaches in order to avoid biased answers. The emic approach is guided by the qualitative data gathered from individuals from each culture, whereas the etic paradigm is defined by quantitative methods, such as the content analysis.

Therefore, for the preliminary stage of the research, it was necessary to:

- Understand the characteristics of advergames in both countries through a content analysis, in order to validate the factors – content, context and culture elements – related to the advergames

- Interview game players from Brazil and the UK, in order to validate the factors – content, context, culture and consumer elements – that evoke consumer attitudes

This stage was achieved by a triangulation of the findings from the interviews and the results from the content analysis. The preliminary research was designed in order to validate the CAKE framework by analysing the advergame elements and the influence of those elements in consumer behaviour (RQ2).

Finally, the last experiment was designed as a case study, composed of advergame design, based on metrics of the CAKE framework, and the application of a questionnaire. For this stage, an advergame was designed in order to favour one culture (in this case the Brazilian culture) and tested in both countries through an online questionnaire. The choice for the case study was applicable as it was necessary to implement the CAKE framework (RQ3).

The following chapters address the detailed design, structure, procedure of the methods employed in this thesis and the findings from each study, which culminates in the implications and validation of the CAKE framework. The next chapter describes and discusses the content analysis.

Table 7-3 Overview of research methods decision

Research Methods	Used in this research?
Ethnography	No. It was not necessary to be immersed in one culture to collect data. It was used as secondary data
Content Analysis	**Yes. As the research involves communication, games and advertising, the approach of content analysis is applicable**
Case Study	**Yes. The aim of the research is to investigate the responses to advergames in Brazil and in the UK and a game was created in order to address the research questions**

Survey/Questionnaire	**Yes. To evaluate people's experiences and attitudes across cultures (metrics and hypothesis-testing)**
Participatory Action Research	No. This approach tends to focus on participative and collaborative research, mostly related to educational and health issues/It is not necessary to test a methodology
Experimental Game Design	**Yes. Experimentation involves the assignment of participants to different conditions/control groups and scenarios**
Field Work	No. It is not necessary to become immersed in the cultures for a long time
Observational Methods	No. It is not necessary to become immersed in the cultures for a long time
Interviews	**Yes, as way to understand game players' perceptions of advergames elements**
Diary Studies	No. It is not necessary to gather data from subjects every day through a diary/It is not a longitudinal research

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Chapter 8:   Content analysis

In this study, a content analysis was conducted in order to identify the structure, form and key parameters created within advergames selected from Brazil and the UK. The characteristics of this method and rationale were discussed in Chapter 7:. The research question related to this chapter is: *What are the aspects of the advergame that could make people from Brazil and the UK have positive attitudes towards brands?*

If considering the dimensions and cultural context argued in Chapter 6, it is possible to expect that:

Individualism (IND) and collectivism (COL) (Hofstede 2001)

- Brazilian advergames would focus on collectivist messages (e.g. group missions)
- British advergames would have clear goals and individual objectives

Power distance (PD) (Hofstede 2001) and Egalitarianism (Schwartz 2006)

- Brazilian advergames would have social comparison features (e.g. leaderboards and social media integration) and hierarchical elements (e.g. strict rules, less space for creativity)
- British advergames would support social issues and/or equality themes

Uncertainty avoidance (UA) (Hofstede 2001)

- Brazilian advergames would be in Brazilian Portuguese (official language); the advergames would be simple (e.g. less choice and content), with less sense of control and less strict rules
- British advergames would be complex (e.g. additional choices and content), allowing players to explore the content with different options

High context and Low context (Hall 1981)

- Brazilian advergames would feature contemplative and intuitive messages, utilising visual and implicit messages
- British advergames would have a more direct communication, with textual messages

Intellectual and affective autonomy (Schwartz 2006)

- Brazilian advergames would have less sense of control, with less customisation and manipulation

- British advergames would provide more sense of control, allowing players to customise and manipulate the game features; advergames would have flexible rules and more opportunity to express creativity and curiosity

Polychromic and monochromic (Hall 1981)

- Brazilian advergames would have multitasking mechanics (e.g. doing more than one thing at once)

- British advergames would have a clear goal

Mastery, harmony (Schwartz 2006) and masculinity (Hofstede 2001)

- British advergames would provide ways to level up

- Brazilian advergames would be related to traditional messages

Considering this, the current study's goal was to:

- Indicate the main advergaming elements for both Brazil and the UK based on the literature review and the CAKE framework

- Outline the way the content is designed in advergames from Brazil and the UK

- Compare content design of advergames from Brazil and the UK

In order to achieve this, a representative sample of advergames in the two countries (Brazil and the UK) was selected, following the development of a coding and analysis sheet. The development of the coding sheet is discussed in the next section.

8.1   Coding categories

The representative sample of the content analysis is mobile advergames. As it is not possible to separate content from technology (Murray 2011), mobile characteristics were included in the coding procedure. The categories in the content analysis are brand representations, aspects of the game, which includes interface design; aspects of pervasiveness (borrowed from (Montola 2005) and related to mobile features); aspects of the message, which includes the advergame theme; and aspects of localisation, which includes cultural representations. Each category is expanded in the next subsections.

8.1.1   Brand representations

The identification of the brand representations is important for the analysis of interface design, storyline and game mechanics of the advergames, as the integration between the brand and the game could influence the effectiveness of advergames (Lee & Youn, 2008; Wise et al. 2008; Chen & Ringel 2001), together with brand category (Cauberghe & Pelsmacker 2010; Shelton & Gross 2010). Considering this, there are eight levels of integration between the brand and the game. Those are:

- Associative/Label: Lowest level of integration; the logo is apparent and in the background
- Illustrative/Entity: Players can interact with the product, represented in only one element in the game
- Demonstrative: Gameplay and narrative show features and benefits of the product
- Associative and Illustrative: There is a logo in the background and the player can interact with the product
- Associative and Demonstrative: There is a logo in the background and the gameplay and narrative reflect the benefits of the product
- Playstoric: Storytelling elements are mixed with the gameplay extension; the storyline is strong and relevant
- Symbolic: Gameplay and aesthetics are associated with the story
- Emotional: The player influences the game world; it is convincing

In the coding sheet, the eight levels of integration were added and measured by their visual appeal, brand material (logos, avatar, colours), story, advergame mechanics and advergame genre.

8.1.2   Aspects of the game

As mentioned at the beginning of section 7.2, there are at least four elements related to effectiveness in advergames considering the aspects of the game. In this scenario, arousal, flow, telepresence and gameplay were translated into codes (see Appendix C):

- Arousal has a strong relationship with curiosity (Qin et al. 2004). Thus, aspects that evoke curiosity, such as presentation of content, were included

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- Flow (Hernandez 2011), interactivity, telepresence (Novak & Hoffman 1996), control, attention, curiosity and intrinsic interest (Csikszentmihaly 1998) could be represented by the consistency of the challenges (e.g. the way they are introduced) and the ability of the player to control and manipulate the elements of the game.

- Levels of media intensity, such as audio, device movements, sound and interface design could help to measure telepresence (i.e. media richness (Steuer 1992)).

8.1.2.1 Advergame structure

In this analysis, game mechanics, interface, game genre and storyline, as highlighted previously in Chapter 3:, make up the game structure.

In advergames, genres were also analysed as an important feature to be considered in the integration of the advergame and the brand, through which the game should have a relevant theme (Wise et al. 2008). In addition to genres, game mechanics should be incorporated. Game mechanics are related to game balance and level design, which includes points and challenges (Hunicke et al. 2004).

The game genres involved in the study followed the categories in the Apple iTunes website[1], such as action, adventure, arcade, board, card, dice, educational, family, music, puzzle, racing, role-playing, shooter, simulation, sports, strategy, trivia and word. This selection is applicable as the sample was selected from iTunes website.

8.1.2.2 Advergame interface design

As highlighted in the previous literature reviewed in Chapter 3:, interface design in games has a combination of fantasy, curiosity and the extension to levels, goals and feedback (Malone 1982), followed by aspects such as customisation (Pinelle et al. 2008; Desurvire & Wiberg 2009) and manipulation and the ability to present well-ordered problems (Gee 2004). Manipulation and interactivity also support the concept of brand interactivity, which reflects the capability of the advergame to integrate the brand in the advergame structure.

In the current analysis, the interface coding is represented by:

- Fantasy (measured by cues to familiar elements or metaphors (Malone 1982))

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[1] https://itunes.apple.com/gb/genre/ios-games/id6014?mt=8

- The capacity of the advergame to enhance curiosity (determined by the presentation of the content in sections)

- Customisation (related to the player's ability to choose the level of difficulty (Pinelle et al. 2008))

- Manipulation (measured by the possibility to choose character/team and levels (Gee 2004)

- Skip the content (Pinelle et al. 2008))

Those elements comprise the coding criteria for interface design in the mobile advergames.

8.1.2.3   Storyline

Games genres are related to thematic and congruity aspects between the game and the brand. This relationship can also be illustrated by the narrative content, which is connected to games' genres (Waiguny et al. 2013). This brings game genre and story into a very close relationship. However, it is necessary to understand what type of story is being told in the game and how the story integrates with the brand meaning.

There are at least three ways to interpret the storyline in the analysed games:

(1) The story was an extension of the brand, confirming the arguments from Wuts et al. (2012)

(2) The story was thematic, but not related to the brand directly

(3) The analysed advergame did not have any story at all (most related to car brands, sports and apparel)

8.1.3   Aspects of pervasiveness

As mobile games often augment the experience of the player to everyday life activities (Bell et al. 2006), they can be investigated as pervasive games (i.e. games that amplify the boundaries of the gameplay experience). This can be achieved in at least three dimensions: spatial (occur in many locations at the same time), temporal (actions are embedded to everyday life) and social (people are game elements) dimensions (Montola 2005).

Considering the mobile context, advergames could include local information and location-based data, bringing new genres such as photo and video hunting, puzzles and *geodashing* (Çeltek 2010). With the exploration of games in mobile devices, aspects like touch screen

attributes of the application need to be investigated, particularly because the screen is hand-held.

In this scenario, the social expansion was extended to the integration with social media and/or ability to provide multiplayer gaming.

In advergames, pervasive dimensions could be represented by the opportunity to carry out real-time actions, integration with reality and social play.

8.1.4   Aspects of the message

Strategic features have been considered in previous research related to the purpose of the advergame such as pure entertainment, having fun with the product, or learning the product's benefits (Lee & Youn 2008). However, the aim of the advergame was not extended to aspects related to brand management, such as brand awareness and brand meaning.

To achieve this, the categories that analyse the purpose of the advergame considered the following principles:

(1) Brand awareness, measured by the level of salience or cues to brand identifiers (Keller 1993)

(2) Brand meaning, measured by associations with brand purpose and proposition (Keller 1993). This could be explored by the story of the advergame and mission and values of the company

(3) Having fun with the product, brand or service, following a similar measurement proposed by Lee and Youn (2008), in which the player has fun with the brand (i.e. fun for fun sake)

Brand meaning, fantasy and extension of the brand are linked to the story in the advergame, as the story is connected to the aspects of the message itself.

8.1.5   Aspects of localisation

As mentioned in Chapter 3, research involving cross-cultural issues in HCI usually considers the discussion about localisation, internationalisation and *culturalisation* as design guidelines. Thus, translated content and tailored elements within the game, such as game assets, are components of those metrics (Edwards 2011). Therefore, it is important to consider two

aspects: translated content and tailored/specific content. The aspects of localisation are related to cultural representations, informed in the CAKE framework. This information can be gathered from language option in the games and customised interface design.

8.2   Coding sheet

The categories for the analysis of the advergame content encompass the characteristics of the brand, the game, pervasiveness, message and culture (see Appendix C).

8.3   Results

The results are organised in brand category, integration between the brand and the game, storyline and advergame theme, the characteristics of the mobile platform, advergame interface, the purpose of the advergame and elements related to culture (e.g. localisation).

8.3.1   Brand category

The majority of the advergames in both samples have been used for food (27.5%), particularly in the advergames analysed from the UK (35%) (see Figure 8-5). Of the Brazilian advergames, 40% featured movies. In fact, the entertainment category has been widely explored in both samples with 25% for movies and 15% for TV shows (e.g. *Top Gear* and *Doctor Who*). This could be related to new opportunities for the extension of the story of TV programmes or movies, or it could be related to the elements of mobile apps and devices, providing a ubiquitous experience, in which the user could play the advergame while watching TV.

8.3.2   Integration of the brand inside the game

Fifty per cent of the Brazilian sample had playstoric integration. This could be a reflection of the brand category itself, as the playstoric integration is related to story-driven brands, such as movies (Wuts et al. 2012). As 40% of the Brazilian advergames featured movies, it is suggested that playstoric integration is related to the brand category. Only 25% of the British sample had the playstoric integration. However, this could be a reflection of the brand category as 10% of the British sample was sponsored by movies.

Forty per cent of the British sample featured the combined associative and illustrative integration. This could be also a reflection of the brand category, as 35% of the British sample was from food brands. For example, Figure 8-1 shows two advergames with combined integration of associative and illustrative design strategies (e.g. logo in the background and interaction with some elements of the product). Thus, it is possible this integration is more an issue between brand category and the game, rather than between culture and game. Yet, if considering the whole frequency from associative to emotional fits, the Brazilian sample had a higher integration, whereas the British sample had a lower integration between the brand and the game. This could reflect the idea of contemplative and intuitive messages, supported by Hall (1981). It is also possible that this integration is a manifestation of the Brazilian sentimental logic mentioned by Azevedo (1971). Thus, for the integration between the brand and the game two aspects should be considered and evaluated in conjunction: brand category and cultural background.

Figure 8-1 Lipton *Cool Cubes* advergame (Unilever Inc. 2013) and *Nestle Chocapic Choca Cannon* (Nestlé 2013), from Nestle showing the combined associative and illustrative integration

8.3.3   Storyline and theme

Considering the thematic story, 60% of the Brazilian sample had brand-related stories and 25% advergames with no story. In the case of the British sample, 45% of the advergames did not have any story and 40% had stories that were not brand-related. From this it could be inferred that Brazilian advergames could have a higher integration between the brand and the game, reinforcing affective attachment. In addition, it was possible to spot the integration between story, message and context. The advergame *Vem ser Brasil – Guaraná* (Guaraná Antarctica 2014), for example, from *Guaraná* (a Brazilian brand), focused the gameplay and story of the

game around the World Cup 2014. The brand itself appeared inside the game as elements to be collected by the character (see Figure 8-2).

Figure 8-2 The advergame *Vem Ser Brasil – Guaraná* (Guaraná Antarctica 2014), featuring *Guaraná* and the *World Cup 2014*

8.3.4 Pervasiveness

Forty per cent of the advergames in the Brazilian sample had social expansion, whereas the British sample had only 20%. This could be related to the tendency of Brazilians to be more social as a collectivist culture (Hofstede 2001), which is reflected in advergame design. Other features related to pervasiveness (spatial and temporal dimensions) did not score high in either sample.

8.3.5 Advergame genre

Fifty five per cent of the Brazilian advergames and 60% of the British advergames were adventure games. This shows a similarity in terms of advergame strategy.

This could be related to the numbers of advergames that featured movies (40%) and TV programmes (15%) in the Brazilian sample. On the other hand, 35% the British sample advergames featured food brands. It is possible that adventure is an effective genre for British consumers.

The gameplays of 12% of the advergames in both samples were similar to other popular games (not advergames). For example, according to a publication from Distimo in 2013, some popular

mobile games are *Temple Run* (Imangi Studios 2011), *Candy Crush Saga* (King 2012) and *Subway Surfers* (Kiloo & Sybo 2012) (Hezemans 2013).

The game *Survival Run with Bear Grylls* (F84 Games 2012) (Figure 8-3 top left) had mechanics that are very similar to *Temple Run*. Both games were adventure games, but with changes in the interface, visual elements, characters and sounds. In addition, both games seem to feature the same storyline (survival run), but within a customised game world. The same is the case in *Top Gear: Race the Stig* (BBC Worldwide (Ltd) 2014), *Minion Rush (or Meu Malvado Favorito in Portuguese)* (Gameloft 2014) (same as *Subway Surfers*), *Frozen Free Fall (*Disney Electronic Content 2014), and *Doctor Who 2: Legacy* (BBC Worldwide Limited & Tiny Rebel Games LLC 2012) (similar to *Candy Crush Saga*) (see Figure 8-3).

Temple Run x Survival Run with Bear Grylls

Subway Surfers x Top Gear Race the Stig and Minion Rush

Candy Crush x Frozen Free Fall and Doctor Who Legacy
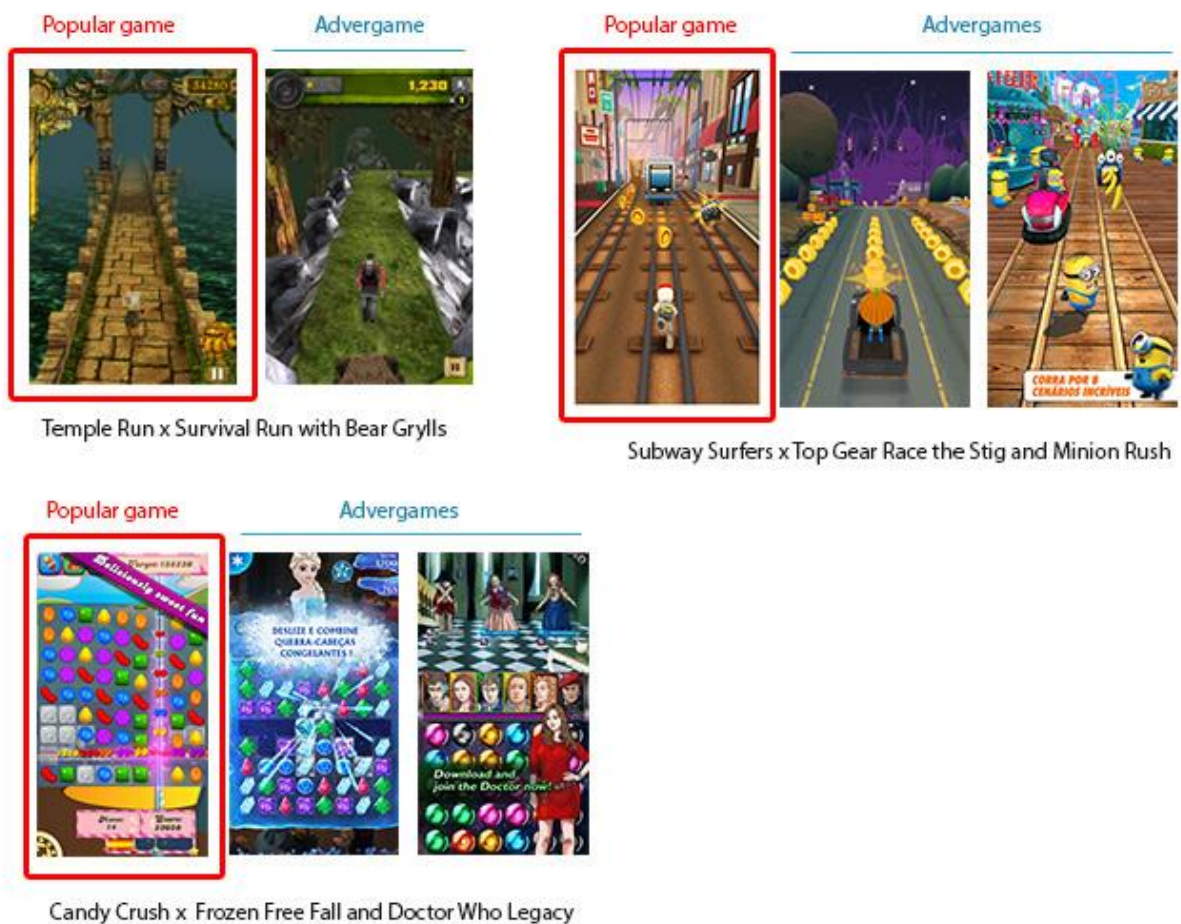
Figure 8-3 Relationship between popular games and advergames

8.3.6 Advergame interface

Considering surprise and novelty, 80% of the Brazilian advergames allowed the player to experience the content partially, with well-ordered problems. This aspect was the same in both samples (80% for the UK).

Regarding media richness, both samples had the same level of interactivity (90% each). Thus, it was not possible to encounter cultural differences in this category. In terms of goals, points and rewards, 40% of British advergames were designed to collect points and 65% of Brazilian sample provided point collection and the possibility to unlock new content. This shows that as the British tend to value personal accomplishments (Hofstede 2001), they would prefer collecting points as a reward instead of unlocking new content.

It was not possible to find a difference in terms of customisation of the advergame; 85% of the Brazilian sample and 75% of the British sample did not allow game customisation. This goes against the idea that British prefer having more control on advergame balance and difficulty. Different from customisation, it was possible to spot some differences in terms of manipulation. All British advergames provided a way to manipulate aspects inside the advergame; those were skipping content, choosing a character/team and choosing a level to play. This can support the validation of the need for autonomy for British players (Schwartz 2006) within the advergames.

8.3.7 Purpose of the advergame

Eighty per cent of the advergames from Brazil were designed for entertainment purposes (see Figure 8-5). This aspect was related to the brand category featured in the game, allowing the player to have fun with the product. For example, 40% of the Brazilian advergames sample featured movies. However, this can be also a reflection of Brazil as a culture that carries a sentimental logic (Azevedo 1971) and affective judgement (Torres & Allen 2009). The British sample had 45% of the advergames created for entertainment, while 45% were created to build brand awareness. Going against the proposition that Brazil favours hierarchy and tradition, 5% of British advergames were created to convey a message of tradition and another 5% were designed to evoke safety feelings. However, this could be also a reflection of the brand category.

8.3.8   Localisation

Only 20% of the Brazilian advergames were originally constructed in Brazilian Portuguese, without being translated from English. Examples are *Treinador Guarana Antarctica* (Hive 2014) and *Mais Divertido Nestle* (Nestlé 2011). Eighty per cent of the Brazilian advergames were originally in the English language and translated to Brazilian Portuguese, while 95% of the British advergames were originally in English and did not require a translation. This could be related to the localisation strategy of the brand (e.g. local brand vs. global brand) or the brand's target public. Considering both samples, 42.5% of the content was translated (see Figure 8-6).

Translated content was the alternative utilised by designers and marketers to provide content for different people from different cultural backgrounds. The choice of the language appeared in the beginning of the game in order to customise the experience; or the gamer could only download the app with his/her language. For example, the advergame sponsoring the movie *Despicable Me* (see Figure 8-4) appeared in the Brazilian version in Brazilian Portuguese and in the UK, in English. Although the titles were different, with translated buttons and texts, the storyline, structure and mechanics were the same. This aspect was repeated in other games sponsoring popular movies such as advergames like *Iron Man 3* (or *Homem de Ferro 3* in Portuguese) (Gameloft 2013), *The Hobbit: Kingdoms of Middle-Earth* (Gaea Hong Kong Holdings Limited 2014) and *Minion Rush* (Gameloft 2014).

Therefore, it is possible to conclude that localisation happened in the level of interface design, particularly if considering WIMP (windows, icons, menus and pointer) elements, which are part of the game interface (Jørgensen 2013) and other textual elements in the advergame (e.g. instructions, story, etc.) (see Figure 8-4).

Figure 8-4 Localisation of buttons and texts from two different versions of the advergame

Minion Rush (Gameloft 2014)

8.4   Discussion

The analysis and results showed that the main differences between both samples were related to the brand. As the variation of the popularity of advergames in each analysed culture was fundamentally related to the brand category, it could be inferred that brand category influences advergame design, particularly whether the brand is a local brand or a global brand. Nevertheless, it is difficult to say if one advergame specifically represents one culture or the other. The cultural elements in the analysed advergames were mainly related to translated content (e.g. buttons, WIMP elements of interface design) or the supported brand (e.g. local brands).

In light of the mobile characteristics, no difference was found in the uses of mobile features like temporal and spatial dimensions. The only dimension that was influence by culture was the integration with social media, which showed that Brazilian advergames reflect the collectivist characteristic of sharing information with friends and family. However, this feature is not exclusive to mobile advergames, since social media could be integrated to other

applications. Thus, this shows that the influence of the platform in that case did not impact the results considerably.

The results from the content analysis showed an intersection between cultural representations and brand representations. This was reflected by the brand category and elements that could be culturally situated. This aspect confirms that brand representations, advergame theme and cultural representations are durable elements from the CONTENT cluster of the CAKE framework.

Table 8-1 Advergame design elements from the CAKE framework reported by the content analysis

Advergame design elements from the CAKE framework	Description	Brazilian advergames	British advergames
Cultural representations	Translated content: buttons, windows, icons, menu (WIMP). Advergames that were not translated featured a local brand	Translated advergames from English to Brazilian Portuguese; high social media integration	Advergames were originally in English, no translated content
Brand representations	Vary according to the brand category; related to the strategy of the brand	High level of brand integration with the game	Lower level of brand integration with the game
Advergame theme	Reflects the context of one country (e.g. *Vem ser Brasil* advergame); related to external factors	Adventure games; brand-related story; advergame purpose is to have fun	Adventure games, advergame purpose is to raise awareness and have fun
Advergame interface	Reflects and supports advergame theme, brand representations and cultural representations	Brazilian Portuguese buttons, WIMP elements; visual and contemplative interface	English buttons, WIMP elements; textual, direct, objective visual interface

Considering game mechanics, some advergames were very similar to popular game apps. This could be a reflection of advergames as casual games (Redondo 2012). However, once the game becomes very similar to a popular game it is possible that the level of novelty could decrease in the long-term relationship.

Considering the interface through customisation and manipulation, all the analysed advergames scored very low. This finding is important when assessing whether one advergame

has the potential to be engaging or not, as engagement is related to meaningful experiences, through which the player can have control.

On the subject of localisation of the advergame, the only customised characteristic was the language, and this did not appear in all of the advergames. This could be related to two propositions:

(1) Advergames might not need any other customised element besides the language to be effective or

(2) Advergames could be more effective if the other elements of the game could be customised according to the targeted public (including culture, gender and age)

Translation of content, however, is not enough. Even for brands and cross-cultural marketing, the translation could bring unintended meaning (Usunier & Lee 2005). The same is reflected in cross-cultural HCI; translation is not enough to localise interface design and this is one of the main concerns of globalised solutions (Marcus & Gould 2000). As games are naturally engaging, it is possible that the localisation of other elements of the advergames needs to be adapted, as well as the language. However, this discussion could be directed to the level of advertising strategy. As some of the analysed advergames featured global brands, the translation could be applicable. This is a way to suggest that the advergames were following the same principles of localisation of other media, such as movies. However, it is necessary to adopt a cultural awareness. For this reason, it is crucial to understand the consumer's perspectives, expectations and cultural values before creating the advertising strategy.

This content analysis allowed this study to open the way to recommendations about advergames elements for effective advergaming design in cross-cultural consumer behaviour (see Table 8-1).

8.5   Summary

The content analysis was conducted in order to identify the characteristics of advergaming design in Brazil and in the UK. The analysis was conducted through a systematic approach, borrowed from the literature review, through the characteristics definition of interface design, mechanics, storyline, message and localisation. The sample was composed of 40 mobile advergames (19 from Brazil and 21 from the UK), downloaded from *App Store* and tested through a coding sheet (see Appendix C, Appendix D and Appendix E).

After scoring the games in the coding sheet, important findings revealed the communication style as follows:

- The brand category with most advergames was food (29%), followed by TV shows and movies (24%)
- 36% of the advergames had playstoric fit
- Brazil had more advergames featuring entertainment brands or story-driven brands
- 26% of the advergames had associative and illustrative integration, which could be related to brand awareness
- One game from a food brand featured a theme, related to the World Cup 2014, showing that themes could be a strategy for advergames
- 12% of the advergames had mechanics that were very similar to popular games
- Most of the characteristics of advergaming design in Brazil and the UK were related to the brand category
- 83% of the Brazilian sample was created originally in English and the content was translated from English to Brazilian Portuguese

As analysed, advergaming design for localised games only follows the adaptation of the language. In cross-cultural HCI and cross-cultural advertising, it is important to consider whether this localisation could go beyond the language; this means that the design of advergames needs to be reviewed. In addition, as the platform of the games is mobile, it is possible that the integration of the context of play needs further exploration, particularly if considering pervasive dimensions. To achieve this, it is important to understand the consumer's perspectives and expectations. This approach is analysed in the next chapter.
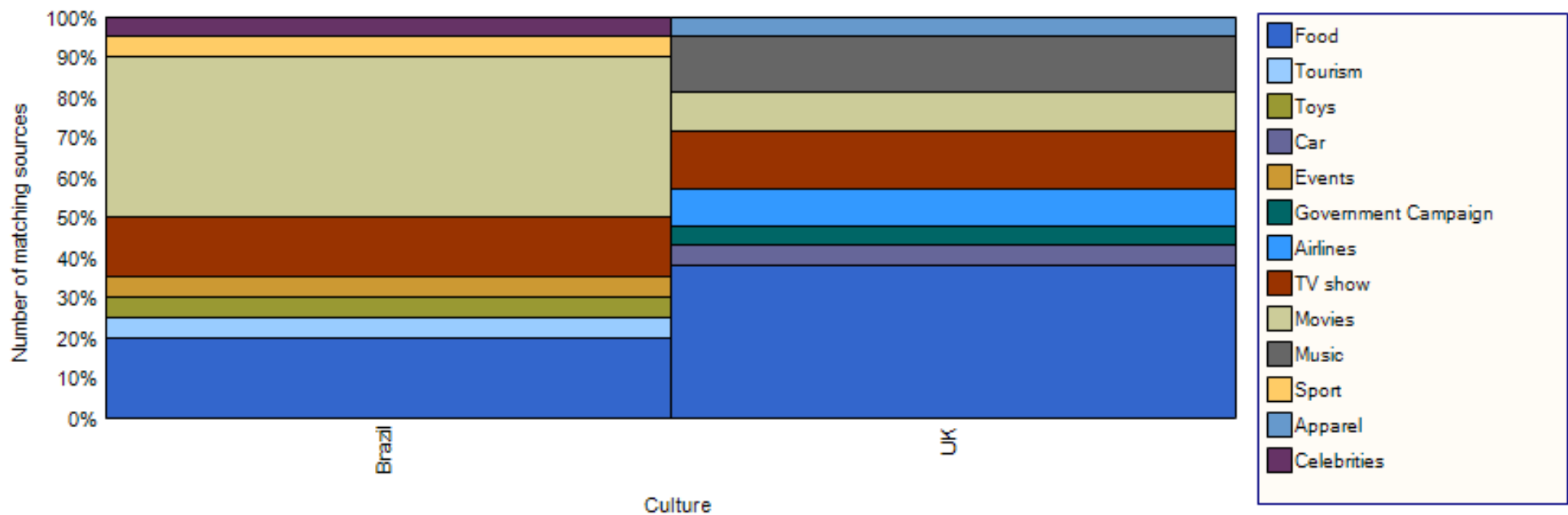
Figure 8-5 The relationship between brand category and the samples from Brazil and the UK
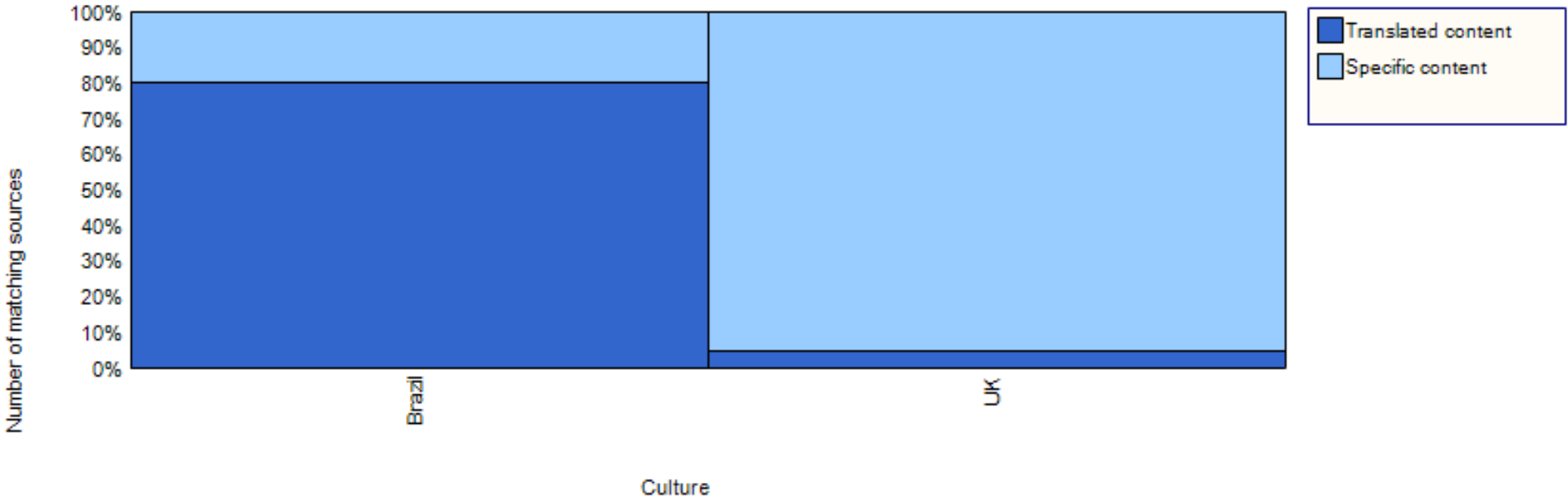
Figure 8-6 The relationship between translated content and the samples from Brazil and the UK

Chapter 9: Interviews with game players

The research question related to this section is: *What are the aspects of the advergame that could make people from Brazil and the UK have positive attitudes towards brands?* The interviews aimed to provide insights about players' preferences towards elements of advergaming design.

The process was guided through a conversation with game players about their perceptions on advergames elements, motivation to play advergames and advergaming attitudes, supported by a semi-structured interview. The rationale for this choice can be found in detail in Chapter 7:.

Considering the cultural dimensions and cultural contexts from Brazil and the UK discussed in Chapter 6, it was possible to expect that:

Individualism (IND) and collectivism (COL) (Hofstede 2001)

- Brazilians would prefer advergames that focus on collectivist messages (e.g. group missions)
- British would prefer advergames that have clear goals and individual objectives

Power distance (PD) (Hofstede 2001) and Egalitarianism (Schwartz 2006)

- Brazilians would prefer advergames that have social comparison features (e.g. leaderboards and social media integration) and hierarchical elements (e.g. strict rules, less space for creativity)
- British would prefer advergames that support social issues and/or equality themes

Uncertainty avoidance (UA) (Hofstede 2001)

- Brazilians would prefer advergames that are in Brazilian Portuguese (official language)
- British would prefer advergames that are complex, allowing players to explore the content with different options

High context and Low context (Hall 1981)

- Brazilians would prefer advergames that feature contemplative and intuitive messages, utilising visual and implicit messages
- British would prefer advergames with a more direct style of communication

Intellectual and affective autonomy (Schwartz 2006)

- Brazilians would prefer advergames that have less sense of control
- British would prefer advergames that provide a sense of control

Polychromic and monochromic (Hall 1981)

- Brazilians would prefer advergames that have multitasking mechanics
- British would prefer advergames with a clear goal

Mastery, harmony (Schwartz 2006) and masculinity (Hofstede 2001)

- British would prefer advergames that could make them level up
- Brazilians would prefer advergames that focus on traditional messages

Country context and previous research

- Brazilians would have more attachment towards brands if compared to British
- British would prefer humorous advergames
- British would be against intrusive advergames
- British could have a higher gaming culture, if compared to Brazilians, based on the country's context and gaming industry maturity
- Brand familiarity could influence British attitudes

Considering this, the main goals of this study were to:

- Outline the effective advergame elements from the perspectives of both Brazilian and British consumers/players
- Identify the attitudes towards advergames in both Brazil and the UK
- Understand the attitudes towards localisation of advergames from the perspectives of both Brazilian and British consumers/players
- Address the elements proposed by the CAKE framework from the perspective of the consumer

The analysis follows an identification and categorisation of elements, exploring the connections of the findings through a thematic analysis. This allows the development of a rich and detailed description of the proposed elements, in order to understand the meaning of effective advergames for people in the cultures selected in this research, including people's perceptions, motivations, expectations and attitudes.

9.1   Findings from the interviews

Brazilian and British respondents indicated a few differences regarding advergame elements and advergame preferences. Figure 9-1 shows *gameplay* and *brand* as the words most frequently mentioned by British respondents. Figure 9-2 represents the recurrent words said by Brazilians, such as *história (story)* and *interface*. The meaning the themes as attitudes towards advergames, advergames elements, motivation to play advergames, localisation, context and simplicity are explained in the next subsections.

Figure 9-1 Tag cloud with words most frequently mentioned by British respondents

Figure 9-2 Tag cloud with words most frequently mentioned by Brazilian respondents

9.1.1 Attitudes towards advergames

Considering both Brazilians' and British perceptions, there was a mixture of negative and positive attitudes, particularly regarding the aspects of the future of advergames in their country. Respondents from Brazil were more positive than the subjects from the UK:

> "Os jogos no Brasil cresceram bastante. Antigamente você não via tantos jogadores. A geração que está crescendo agora está super envolvida nisso. Eu acho que tem muito a ser explorado ainda. A tendência é a crescer mais. E o Brasil é receptivo a isso." *The games in Brazil have grown significantly. A long time ago, it was not possible to see so many players. The generation that is growing today is more involved with games. I think that it has a lot to be explored. The trend is to grow more. (And I think that) people in Brazil are receptive to it. –* 001-BRA-18-M

> "Eu vejo uma convergência entre publicidade e jogos e a geração que cresceu com jogos que está mais atuante no mercado (desde os anos 80 e outras gerações que estão chegando.) é uma combinação de interesses. Eu vejo com bons olhos." *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
>
> "Então acho que o game é o próximo passo. Eu vejo como futuro da divulgação." *I think that the game is the next step. I see it as a future of advertising.* 003-BRA-21-M

> "Eu acho que a tendência é crescer porque é uma forma de você fazer uma propaganda mais barata e de engajar as pessoas também. Fazer aquela marca virar uma coisa do seu dia-a-dia fora a compra e venda." *I think that it tends to grow because it is another way to do advertising in a cheaper way and it could engage people. It is a way to make that brand become something from your own routine, beyond the relationship of buying/selling.* 005-BRA-34-F

Brazilians were very optimistic towards the future of advergames in their country. They have associated the advergames as something that could be part of their lives, building a stronger relationship with the consumer.

In the UK, the answers were different. Respondents were not positive towards the advergames, unless the design of the advergames could be improved:

"I see advergames doing the same thing - becoming more aggressive and targeted - more difficult to avoid which I don't think is a bad thing, unless it is done in a tasteful way" – 001-ENG-27-F

"It's hard to say. Because many of those advergames... I'm not too impressed to be honest. Those things pop up and go away" - 004-ENG-25-M

"I see advergaming becoming huge; however 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

"I think they need to put more effort into game play and story" – 005-ENG-27-M

"Hopefully if this changes the storyline and gameplay aspects more there should be more games out there. I think it's just the perception of being shamelessly marketed. It has to have a solid game behind it to have more people interested in it." – 006-ENG-25-M

9.1.1.1   Attitudes towards advertising in general

For some respondents in the UK, attitudes towards advertising in general seemed to be related to the attitudes towards the advergames, as:

"People in England - as an attitude they don't like to be told what to do or what to buy."- 009-ENG-24-M

"If the game became more as advertising I know that there is targeted advertising." – 001-ENG-27-F

Previous research has found that people who are negative about advertising are also negative towards advergames (Winkler & Buckner, 2006). As British consumers tend to prefer messages that are subtle (Bradley, Hitchon & Thorson, 1994), it is possible that the advergame message for the public in the UK is not following this principle. Moreover, this is consistent with Friestad and Wright's (1994) Model of Persuasion Knowledge (PKM), illustrated by the resistance to the persuasive attempt.

9.1.2 Advergame design elements

The aspects related to advergame design elements followed the proposed CAKE framework elements such as context, content of the advergame interface design, game mechanics and storyline.

9.1.2.1 Interface

For respondents in Brazil, the interface of the advergames was related to visual aspects and simplicity, having a strong impact in the effectiveness of advergames.

"A interface visual é uma coisa muito prática." *The interface is something very practical.* – 001-BRA-18-M

"Às vezes pesa mais do que a mecânica. Você pode fazer um jogo maneiríssimo e muito bem implementado e elaborado mas se ele tiver um visual que não agrade a pessoa não vai jogar." *Sometimes the interface is more important than the game mechanics. You can create a very cool game which is very well implemented but if it doesn't have a visual aspect that the person doesn't like, he/she won't play the game.* – 004-BRA-30-M

"Dependendo a sua marca você pode fazer um jogo mega simples mas com o visual muito bom. E que de repente isso é o mais importante." *Depending on the brand, you could create a very simple game but with a very good visual aspect. And this could be the most important thing.* – 004-BRA-30-M

Another aspect mentioned was the importance of the influence of character design in order to express the message that is embedded within the game:

"Eu acho que o grande trunfo da divulgação utilizando games é a criação de personagens, o design e nas sacadas." *I think that the biggest strategy of the advertisement using games is the character design and the creative ideas.* 003-BRA-21-M

Character design could be a relevant strategy for building meaning through the game. In advergames, characters compose brand identifiers (Paek et al. 2013).

For the respondents in the UK, the interface is the way that the advergame message is expressed for a specific public:

"Interface - I think it's good too. It's how you bring your message to the public." 010-ENG-24-M

9.1.2.2   Mechanics

British respondents often mentioned game mechanics as the game design element that designers need to take into account while designing effective advergames. For them, the main gameplay experience needs to have good quality, enhanced by challenges, rewards and feedback structures:

> "I would say that the most important one is the game mechanics… They are more important because they reflect the way people play it. You can forgive a weak storyline or interface if the core gameplay has a good quality." 006-ENG-25-M

> "If the game is too simple, then most people would put to the side. There is no challenge. It is like a stupid game." 010-ENG-24-M

> "At least for me the most important thing would be the actual gameplay…combined with the graphics. It doesn't need to be super graphics; it just needs to be nice." 004-ENG-25-M

> "The balance between the competency and the challenge: those two things are very 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

Graphics were mentioned as an element that does not need to be sophisticated, but simple. In addition, British respondents and some Brazilians reported the aspect of game balance:

> "Se for um jogo que é muito complicado de jogar, que não tem uma jogabilidade boa, que é muito difícil, que as regras são muito difíceis, acaba não motivando muito a pessoa a jogar o jogo." *If it is a game that is too complicated to play, a game that doesn't have a good gameplay, which is very difficult, with difficult rules, it ends up not motivating people to play the game.* 008-BRA-21-M

As flow is by definition the balance between challenge and player's skills (Bizzocchi, Lin and Tanenbaum, 2011), this equilibrium is important for advergames effectiveness.

9.1.2.3   Storyline

The aspects related to storyline in both samples had a strong relationship with the interface design. This characteristic could be related to the role of the interface to inform and transmit the story. For example:

> "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

"A história e a marca. Você não vai falar de uma marca de barco, colocando um avião no jogo. Tudo gira em torno da história. A interface tem que ter qualidade." *The storyline and the brand. You won't talk about a boat brand using an airplane in the game. Everything goes around the story. And the interface needs to have quality.* 005-BRA-34-F

"A interface tem que ser amigável e a história tem que fazer sentido para quem está jogando." *The interface needs to be friendly and the story needs to make sense for the player.* 010-BRA-29-F

Another aspect highlighted by some of the quotes above is the congruency between the story and the brand message, combined with the reflection of the narrative inside the interface. This infers that the interface informs the player about the story and the message that the advergame is trying to transmit.

9.1.3   Motivation to play advergames

For respondents from Brazil, the game elements that might influence them to play advergames could be related to the interface design, the message, challenges and social factors. For example:

"Acho que uma interface interessante ou criativa, com intuito educacional e com intuito de diversão me atrairia. Tem que ter um desafio relevante e uma boa experiência. Ou desafios temáticos." *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

"O fator social. Primeiro o jogo tem que ser rápido se for um jogo individual. Agora se for um jogo que você consegue compartilhar coisas com os seus amigos ou cumprir missões junto com os seus amigos eu acho que isso acaba influenciando mais as pessoas. A gente é muito social." *The social fact. First, the game needs to be quick, if it's a game to play alone. If it's a game that you can share things with your friends or complete missions with your friends then I think that this might influence people more (to play the game). We are very social*. - 009-BRA-26-F

9.1.3.1   Viral marketing

Viral marketing appeared to be one of the strategies employed to make people play advergames. It could be related to online recommendations and the influence of other people's point of view concerning the decision-making process.

In this scenario, some people in Brazil said that their motivation to play the advergame is because it is already something that is popular or viral. For this reason, the ability of the advergame to 'become' something that is viral and that could be recommended to other people could be a way to enhance effectiveness, particularly in Brazil.

"Você tem que viralizar o seu jogo. O jogo pega quando ele viraliza mesmo, sendo ruim ou bom. As pessoas baixam por curiosidade, porque tá na moda." *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

9.1.4 Localisation

Perceptions about localisation from Brazilian respondents were specifically related to the language translation. Some of them thought that having the translation would not be helpful, and some thought that this aspect was crucial. This could be related to the target public, as some people in Brazil do not speak English, for example.

"Eu prefiro o jogo inglês porque pela minha experiência de ler livro traduzido, tanto livro bobo ou da faculdade, eu sempre senti perda em tradução. Então eu prefiro ver coisas em inglês." *I prefer the game to be in English because from my experience of translated books I've always felt some loss of information when translated. So I prefer to see things in English.* 008-BRA-21-M

"Eu acho que regionalização é importante, principalmente a língua. As coisas em inglês não vingam no Brasil... a maioria dos Brasileiros não fala inglês. A Regionalização é importante se for na língua, mas não necessariamente em outros sentidos. Porque Brasileiro geralmente tem uma certa repulsa a temas nacionais." *I think localisation is important, particularly for the language. The things in English don't do well in Brazil... The majority of the Brazilians don't speak English. The localisation is important if it is in the language, but not necessarily in other ways, because Brazilians usually reject national themes.* 012-BRA-34-M

"Às vezes quando não há tradução é difícil para as pessoas. A língua eu acho que tem que ser adaptado. A adaptação cultural vejo muito a favor. Fica mais próximo da pessoa. É muito mais fácil você consumir uma coisa que está na sua cultura do que você buscar algo que esteja na cultura de outro pais." *Sometimes when there is no translation it is difficult for people. The language needs to be adapted. I'm in favour of cultural adaption. It gets closer to the individual. It is so much easier for you to consume something that is*

in your culture rather than find something that is in another country's culture 003-BRA-21-M

One specific thought about national themes was highlighted by some of the participants. The cultural appeal brought into question the boundaries of how to make one advergame culturally appealing. What are the relevant cultural elements? The answer for this question may lie in the utilisation of contextual information, discussed in the next section.

For respondents in the UK, localisation is related to personalised experiences or familiar situations, bringing the advergame closer to the player's lifestyle:

"Changing it and making it relative to that culture makes the game more powerful because it's more personal." 002-ENG-28-M

The same was mentioned by Brazilians, but less in terms of personalisation:

"(Localização) depende muito do público-alvo." *Localisation depends a lot on the target public.* 007-BRA-25-M

"A parte de incorporar cultura, só se você quiser mesmo atingir um público alvo especifico." *The idea of incorporating a culture could be applicable only if you want to reach a specific target public.* 008-BRA-21-M

As most of the British respondents preferred good-quality game mechanics, their localisation was not seen as something positive:

"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

"Most of the international and entertainment games have to consider localisation of the games. Apparently EU gamers prefer tougher game challenges." 006-ENG-25-M

Localisation regarding the interface elements was mentioned in both cultures:

"Tem que ver onde você vai implementar essa identificação, essa adaptação. É mais fácil implementar na interface. Se você mexer na mecânica, mexe em muita coisa, você pode tomar o jogo muito difícil ou muito fácil e isso pode interferir na emoção das pessoas, ou como as pessoas estão se sentindo em relação ao jogo." *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 (you should take into account) just the assets." 010-ENG-24-M

"Adaptar a história e a interface em alguma coisa mais local." *(You should) adapt the story and the interface from something local.* 005-BRA-34-F

"Characters and story are the two main things that should be very culturally aware." 005-ENG-27-M

Some aspects related to localisation seemed to be also related to attitudes towards the brand. If the brand fails in the localisation of the advergame, it could have a negative impact on perceptions of the brand:

"If you bring a game that you have created in the UK for a UK audience and say introduce it to the Middle East it could go as far as being offensive… it would actually have a negative effect on the brand." 002-ENG-28-M

For this reason, the understanding of the audience and the users is crucial and vital for the design of advergames in different cultures.

9.1.5 Contextual information: familiarity, metaphors and popular culture

For the contextual information, some experiences were related to familiarity. In this case, the relationship with familiarity and metaphors was representative in the interviews from both samples. Aspects that were related to it were viral messages and popular culture, particularly for respondents in Brazil.

"Normalmente as pessoas vão jogar um advergame de uma coisa que está viralizada. Se você conseguir viralizar uma ideia, é um momento perfeito para você fazer isso. Então você fazer, tornar uma ideia antes de fazer o jogo eu acho que é uma coisa que possa motivar as pessoas a jogar o jogo." *Usually people will play one advergame related to one thing that has already gone viral. If you can make one idea become viral, that's the best moment. If you build one idea before building your game, that could be something that could motivate people to play it.* 008-BRA-21-M

"Você tem uma narrativa que passa uma mensagem através dessa narrativa porque isso é comprovadamente mais memorável do que você simplesmente jogar uma mensagem no consumidor. Fica mais familiar." *You have one narrative and if you send your message*

through this narrative, it is already proven that this is more memorable than just
throwing a message at the consumer. It becomes more familiar. 009-BRA-26-F

"A melhor forma de divulgar é criar um mecanismo para a pessoa lembrar daquele
produto por um determinado tempo. Por exemplo, uma piada, ou algum nome, alguma
associação com alguma coisa também popular." *The best way to advertise is to create a*
mechanism for the individual to remember that product for a certain time. For example:
a joke or one name, some association with something popular. 003-BRA-21-M

"É porque eu acho que as pessoas jogam aqui muito mais a base da febre." *I think*
people here play games because of their (games') popularity. 004-BRA-30-M

"Tem que ver o que está fazendo sucesso no momento. Não tem como fugir. É mais
garantir que você faça uma coisa que está no gosto popular." *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

For this reason, sometimes the advergame that is created around a movie or a TV programme, for
example, could be a way to make people play the game, as people are familiar with the movie or
the TV programme in question.

Lifestyle also appeared in the list of cultural attachment, not only in order to localise the game,
but also with the aim to make it more familiar for the player.

"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

In fact, familiarity was one aspect not only related to the theme of the advergame but to the
game mechanics. Although the opinions were diverse, some of the players reported that some
mechanics were similar to popular mobile games:

"Eles pegaram um jogo que já era comum e adaptaram para lançar o filme. Acabou que
ficou uma coisa muito legal, pois eles pegaram um personagem (Guardiões da Galáxia).
Pegaram uma mecânica que de um jogo que tem um bom rating na Apple Store e
adaptaram de uma forma muito boa." *They have a game that was already common and*
they've adapted it to be released along with the movie release. In the end, it became
something very cool, as they've used a known character (Guardians of the Galaxy). They
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

"I think some companies could make use for it like if they go along with games that are already there." 007-ENG-34-M

The strategy highlighted in the quote matches the findings of the content analysis explained in the previous chapter.

9.1.6 Social context

Social media was a reflection of this dimension, as the advergame could incorporate other players through invitations, for example. For Brazilians, this could be very effective, as:

"Acho que social media está sendo um elemento muito importante na divulgação no Brasil." *I think social media is one element that is very important for advertisements in Brazil.* 003-BRA-21-M

For British players, social media integration and the social context could be a way to provide motivational cues for them to play the advergames. However, it depends on the target public and the aim of the advergame:

"A lot of the stuff now is spread by social interactions, so if one person plays it you know and they send you a Facebook invite saying 'come and play this game'. That's how these games have become more and more popular." 007-ENG-34-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

9.1.7 Simplicity

Simplicity was a theme that appeared in different perspectives from both samples. For the Brazilian respondents, simplicity was related to simple storyline, mechanics and interface. For example, according to them, the storyline needs to be short, the interface needs to be usable and intuitive and the mechanics should be quick:

"Acho que no Brasil, para a divulgação no Brasil, o ideal é que o jogo seja mais simples." *Ideally, I think that for advertising in Brazil, the game should be simpler.* 003-BRA-21-M

"É engraçado às vezes tem coisa que está no inconsciente e você joga um jogo muito simples." *It's funny because sometimes there are things (that you do) that are unconscious and you play a game that is very simple.* 006-BRA-30-F

"Um jogo mobile tem que ser apesar de tudo um jogo simples. No mobile a jogabilidade é importante pois o controle tem que refletir a facilidade e usabilidade de resposta pelo recurso de comandos e botões... Você tem que conseguir fazer algo intuitivo através do *touch* e precisa de um contexto que ao mesmo tempo consiga envolver o jogador rápido e que se resolva rápido, que seja por meio de fases ou capítulos que sejam curtos." *A mobile game should be besides everything a simple game. In the mobile games, the gameplay is important, as the controls need to reflect the facility and the usability of answers through the command sources and buttons... 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

 "Eu acho que a jogabilidade tem que ser tranquila e fácil. Um jogo fácil pode motivar as pessoas. Tem que ter regras simples, uma jogabilidade maneira e jogar com outras pessoas, eu acho que deixa o jogo perfeito para expor uma publicidade, uma ideia. Eu acho que o advergame tem que ser simples. Pode ter uma história. Uma história engraçada e boba, do que uma história assim cheia de reviravoltas. Estilo jogo casual." *I think that the gameplay needs to be smooth and easy. An easy game could motivate people. It should have simple rules, a good gameplay and the possibility to play with other people. I think that this could make the game perfect to expose one advertisement or one idea. I think that the advergame should be simple. It could have a story: a story that is funny and comic, and not a story full of twists. Like a casual game.* 008-BRA-21-M

"Acho que quanto mais simples a interface e mais simples a interação do usuário com o jogo mais fácil você será aceito pelo público." *I think that the more simple the interface could be, combined with an easy user interaction inside the game, the easier it will be accepted by the public.* 009-BRA-26-F

For the respondents in the UK, the simplicity aspect was related to the gameplay, including feedback loops and rewards (see Figure 9-3). The words "hooked" and "addictive" represent this characteristic:

"Some games are very simple but keep you hooked because of the incentive of winning." – 002-ENG-28-M

"So you can't just make a simple game and keep it. I think it has to be addictive." 010-ENG-24-M

Curiously, the strategies that make games addictive were presented in an article published in the Guardian (Smith 2014) about the casual (and mobile) game *Candy Crush Saga*, already mentioned in the previous chapter. For example, this game was particularly designed in portrait, in order to allow the user to play with one hand, combined with other aspects such as colour scheme, rewards and arousal (Smith 2014). This aspect shows that the design decisions for game development influence this "addiction".
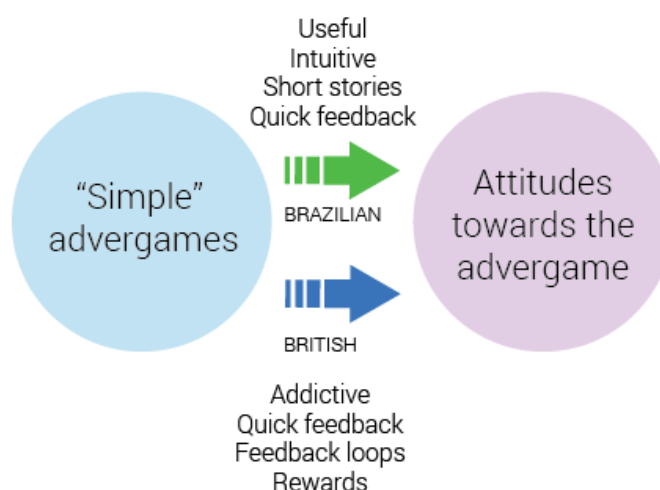
Figure 9-3 Relationship between simplicity and attitudes towards the advergame

Casual games are often described as games that involve simple game controls and less complexity in gameplay mechanics or even time required to play the game (Redondo 2012). It is possible that casual games tend to be simple. However, it is still necessary to understand the concept of simplicity. As discussed by Juul (2012), casual games match the user's goals. This could infer that the game is designed according to the experience that the user might need in a certain moment or time of his/her life.

9.2   Discussion

Brazilian attitudes towards advergames were more positive than those of the British. One reason for that could be that the British games industry is more mature than the Brazilian one. This supports Greenfield et al.'s (1994) work; that game knowledge can vary across cultures. Another reason could be the attitudes towards advertising in general. This shows that the perception of message "intrusiveness" can affect attitudes towards advergames, which is consistent with Hernandez et al. (2004).

For Brazilians, meaningful advergames were related to popular culture, reinforcing familiar content (see Table 9-1). This could reflect of high levels of Uncertainty Avoidance (Hofstede 2001), if compared to the case with the British. Moreover, Brazilians showed a preference towards

visually appealing content, reflected by the advergame interface design. This suggests that Brazilians operate in terms of context, giving importance to contemplative content (Hall 1981).

A theme that emerged from the analysis was "simplicity". Brazilians mentioned ease of use and intuitive controls. This shows that an antecedent of game enjoyment is ease of use. Simplicity is also related to cultural backgrounds and conceptual models, as Westerners are more likely to seek clean appearances, with a lot of white space between the features of the product (Norman 2011). As argued by Norman (2011), what makes something simple or complex is *not* the number of features that the object has, but the mental state it evokes, and the meaning of the controls. Brazilians and British shared common opinions towards simple advergames.

Table 9-1 The relationship between findings and the perceptions from Brazilian and British respondents

	Brazil	UK
Interface	• Visually appealing • Character design • Needs to have quality	• Key element to communicate the message
Mechanics	• It needs to have a balance (hard/easy gameplay and flow) • Could be borrowed from popular games	• Good quality • Meaningful challenge • Flow experience • Rewards
Storyline	• It needs to be meaningful • It is reflected in the interface	• Could be a way to build emotional attachment
Localisation	• The language is important • Focus on the interface	• It could be more personal • Game mechanics do not need to be different
Content	**Contextual information:** • Popular culture • Utilise viral themes • Could build familiarity • Could be memorable	**Contextual information:** • It could become part of the lifestyle
Context	**Social context:** • People play because friends are playing • Social media	**Social context:** • Social media

For advergame design, Brazilians mentioned the importance of the interface, whereas British respondents defended the mechanics of the advergame. If confronting the model proposed by Hassenzahl (2005) (see Chapter 2), it is possible that for Brazilians this aspect is related to a more *hedonic attribute* of the overall experience with advergames. This would imply that, for British

players, the attributes from the game would be more *pragmatic*. Although these perceptions were slightly different, for both Brazilians and British, the mechanics could not be changed to favour one group.

Considering advergame design, the interface was mentioned as one main element for localisation of advergames in specific cultures. Some respondents mentioned that if a change is necessary in the game, it is necessary to modify the interface and assets.

Respondents from both cultures mentioned the importance of the advergames elements:

(1) British respondents preferred advergames that could enhance good game mechanics

(2) Brazilians identified that interface and storyline have a significant impact in their intention to play one advergame

(3) Content was related to contextual information and had a strong impact in the advergame preferences in both countries

This validates the concept that interface, storyline, game mechanics and content have a strong influence on the player/consumer behaviour. However, the level of adaptation is conveyed by interface design. For some respondents, the motivation to play was more related to influence of others playing the advergame or friends' recommendations, particularly for Brazilians.

9.3   Summary

There are two ways to interpret the findings of this study: *expected* (driven by the deductive approach) and *unexpected* (driven by the inductive approach). The expected outcomes were related to the differences and similarities regarding preferences of the advergames' elements and the respondents' perceptions of their effectiveness in their country. For example, most of Brazilians thought that interface and storyline were more important, whereas British respondents thought that game mechanics were more relevant. This aspect showed that British game players are strongly related to the individualism cultural dimension (Hofstede 2011; 2001). However, for both groups, simplicity was a theme that emerged from the interviews. For them, simplicity could be enhanced by all the elements of the game (interface, story and mechanics). In that case, participants did not mention any preferences to advergame platforms. For Brazilians, contextual information showed a high impact in the influence of the advergame in Brazil, supporting Brazil as a high-contextual culture (Hall 1981).

The interviews helped to expand the aspects found in the content analysis and to validate the CAKE elements. The process of validation and the analysis of the implications of the triangulation of the content analysis and the interviews are explored in the next chapter.

Chapter 10: Implications for the CAKE framework

The CAKE framework was created in order to integrate perspectives of cross-cultural HCI and cross-cultural consumer behaviour in a holistic way. In Chapter 5, the CAKE elements were discussed: attitudes towards the brand, game enjoyment (conveyed by advergame elements) and cultural values/representations. The advergame elements were separated in content, context, interface design, storyline and mechanics.

In the research design (Chapter 6), a triangulation approach was undertaken, combining content analysis and interviews, in order to address the research question: *What are the aspects of the advergame that could make people from Brazil and the UK have positive attitudes towards brands?* The triangulation showed that the CAKE framework could be improved in order to address cultural perspectives from Brazil and the UK.

The main implications from the content analysis were:
- Localisation: the majority of the advergames were non-localised or just translated, going against cross-cultural HCI theories
- Local brands vs. global brands: global brands might find a need to localise their advergames, whereas for local brands, the advergame is more "local"
- Advergame theme: advergames could follow events from each country
- Choices of design were a combination of brand category and culture

The aspects highlighted in the interviews were:
- Contextual information
- Attitudes towards the advergame
- Hedonic attributes vs. Pragmatic attributes (Hassenzahl 2005) of the advergame could vary across cultures

Considering the perceptions of respondents from Brazil and the UK, Brazilians saw the future of advergames in their country as a marketing tool, whereas British game players believed that advergames needed to change in order to retain their interest. Moreover, the game preferences had a strong influence in people's attitudes towards the advergames in both cultures; however, this was not attached to a cultural value. Regarding the elements of advergames, British respondents ascribed more importance to game mechanics, whereas for Brazilians, the interface design and story were more important. Thus, a content strategy design is necessary in order to bring a relevant message to people in different cultures. For this reason, the contextual information highlighted by the participants is crucial for the effectiveness of cross-cultural

advergames. For example, if marketers want to build one advergame for a specific culture, they should consider the expressions and nuances that contextualise this culture.

Another aspect worth mentioning was the platform studied in the content analysis. The only principle related to mobile expansions that emerged from the comparison was the integration to social media. However, this feature is not exclusive to mobile advergames, which indicates that the mobile platform might not incorporate cultural values. In fact, in the interviews, participants did not mention preferences towards the platform.

Considering the perspective of game players, the theme that appeared most was the principle of simplicity. Game players mentioned that they like simple advergames. According to the participants' point of view, simple games could have simple mechanics, simple storyline or simple interface design. However, what is simple for people in Brazil and for those in the UK? Simplicity is something that is in the mind – it is relative; and it has a strong relationship with conceptual models (Norman, 1983). Moreover, social and cultural norms could drive and define conceptual models and the perception of simplicity (Norman 2011; 1983). Thus, simplicity is situated in a context, determined by culture.

Therefore, considering the aspects highlighted in the interviews, a few additions were attached to the CAKE framework:

- The concept of simplicity, intuition and mental models, related to established patterns, associations and familiarity
- Game mechanics should not be localised/different
- The advertising message should follow a content strategy

10.1 Implications from the triangulation

The results from the content analysis showed a tendency for language localisation and the utilisation of popular games as a strategy. In parallel, the interviews showed that gamers want simple games, but the concept of "simplicity" can be very broad. Thus, it is possible that there is a link between using popular themes and being simple.

Simplicity has a strong relationship to established patterns; for example, the utilisation of patterns in design could simplify interactions (Norman 2011). Consistently, Evers and Days (1997) argued that perceptions about ease of use are related to cultural preferences. Therefore, as the participants mentioned that they wanted the advergames to be simpler, it is possible that there is a disconnection between those patterns and the actual design of advergames. Although in the content analysis some advergames copied the mechanics of popular games (see Chapter 8), it is

not clear if this is one attempt to make things simple and familiar. For example, the copy of the mechanics of one game could make the advergame easy, out of date or not interesting, particularly if the player had already interacted with the original game, so it is necessary to achieve a balance between simplicity, familiarity and curiosity. Moreover, besides the mechanics, simplicity has a link with usability and the way the interface design presents the information. Therefore, if a conceptual model does not match a mental model, interactions could be difficult. Besides that, simplicity has a significant relationship with the System 1 of thinking, represented by associations, familiar activities and easy actions. Moreover, this could reveal that metaphors may be a way to build simplicity in advergames, which could guide the research around visual familiarity and its influence in consumer behaviour.

Confronting the findings with the research conjecture - *Advergames influence and embed cross-cultural consumer behaviour* -, it is possible to show that the results support this main assumption (see Figure 10-1). However, this happens at different levels; for example, British respondents were more negative towards advergames and this could be related to their relation to persuasive attempts and cultural dimensions such as power distance. Do advergames embed those characteristics? As most of the advergames analysed were not localised, it is possible that these do not incorporate the characteristics of cross-cultural consumer behaviour.

Uncertainty avoidance = level of simplicity
in user interface design
Power distance = information access
in user interface design

Brazil and UK cultural
dimensions

No relationship
The games are the same

Brazilians were more positive
towards advergames

Content Analysis

Advergames
designed for people
in Brazil and the UK

Weak relationship

*

Interviews

People's expectations,
habits, mental models,
motivations
and experiences

- Little localisation
(only with translated content)
- Brand category guides
the design

- Not engaging
- Advergames should be simple
- Mechanics are more important for British players
- Interface design and storyline are
important for Brazilians

* Area of application of the CAKE framework

Figure 10-1 Results and the area of application of the CAKE framework

10.2   The CAKE framework revisited

The CAKE framework was initially designed in a generic way, based on the findings from the previous literature in cross-cultural consumer behaviour, cross-cultural HCI and games and advergame effectiveness. The preliminary study (stage 1) helped to contextualise the CAKE framework for Brazil and the UK. In this section, the CAKE framework is revisited in order to express the implications of the preliminary study for the CAKE framework grounded through Brazilian and British cultural dimensions and cultural context.

After the analysis of the implications of the triangulation, the CAKE framework was adjusted, considering several elements; these are listed below (see Figure 10-3 for the adjusted version):

1.   Interface design became the key component of advergame elements that integrates cultural meaning

Brazilian respondents preferred advergames with good interface design and relevant stories. At the same time, British participants thought that the mechanics were more important for them. However, for localisation, all respondents mentioned that the creation of an advergame with

different mechanics for each culture might not work. Thus, the interface design assumed a strong position on the transference of culturally situated elements.

2. Familiarity in order to convey ease of use (simplicity)

As simplicity is related to mental models and conceptual models (Norman 1983), it is necessary to focus on the interface design and the translation of this perception of simplicity within the advergame. Familiarity also appeared through popular mechanics in the content analysis. The need for viral themes and association to popular culture was also another topic explored by the interviews. Thus, the inclusion of familiarity is necessary for the effectiveness of the framework. Visual references such as stereotypes, similar products, characters and conventions could help the user to acquire an association and identification with the product/brand (Crilly et al. 2004). Moreover, being familiar with aspects of systems could induce users to act in a more natural way (Evers & Day 1997).

3. Virality

As mentioned in the interviews, social media had an impact on advergame effectiveness in both groups. This was explored through the intentions to share the game and the influence of people's recommendations in motivations to play advergames. Thus, virality as intentions to share was added as advergame effectiveness (behavioural outcomes). Considering the psychological side of the CAKE, the addition of the viral marketing or "virality" corroborates Lee and Youn's (2008) idea about the relationship between advergame effectiveness and the capacity of the advergame to become viral.

4. Humour

Jokes and humour were mentioned in the interviews. In fact, humour is related to context in terms of cultural dimensions. One reason is that humour is contextual. For this reason, humour was added to the CAKE framework as part of advergame effectiveness (psychological aspects).

5. Previous gameplay experience

In terms of game experience, the understanding of previous gameplay experience is crucial for advergame effectiveness. For example, the content analysis showed the utilisation of popular game mechanics, copied and adapted from popular games. This suggests that gamers that already played those games would feel familiar with the game mechanics. Moreover, this adaptation from popular games also appeared in the interviews. Thus, previous gameplay experience could also reflect a game "literacy" or a reflection of gaming as a culture. This aspect should not be overlooked and therefore was added to the collection of the characteristics of the consumer in the CAKE framework.

6. Consumer behaviour was divided based on before and after gameplay

As previous gameplay experience, brand familiarity and cultural representations (e.g. metaphors, visual familiarity, popular culture) can influence advergame effectiveness; those aspects were classified as components that exist *before* the gameplay interaction. For the outcomes of the interaction, there is experience: gameplay experience (including arousal, game enjoyment and humour), attitudes towards the brand and intentions to share the advergame (see Figure 10-2).
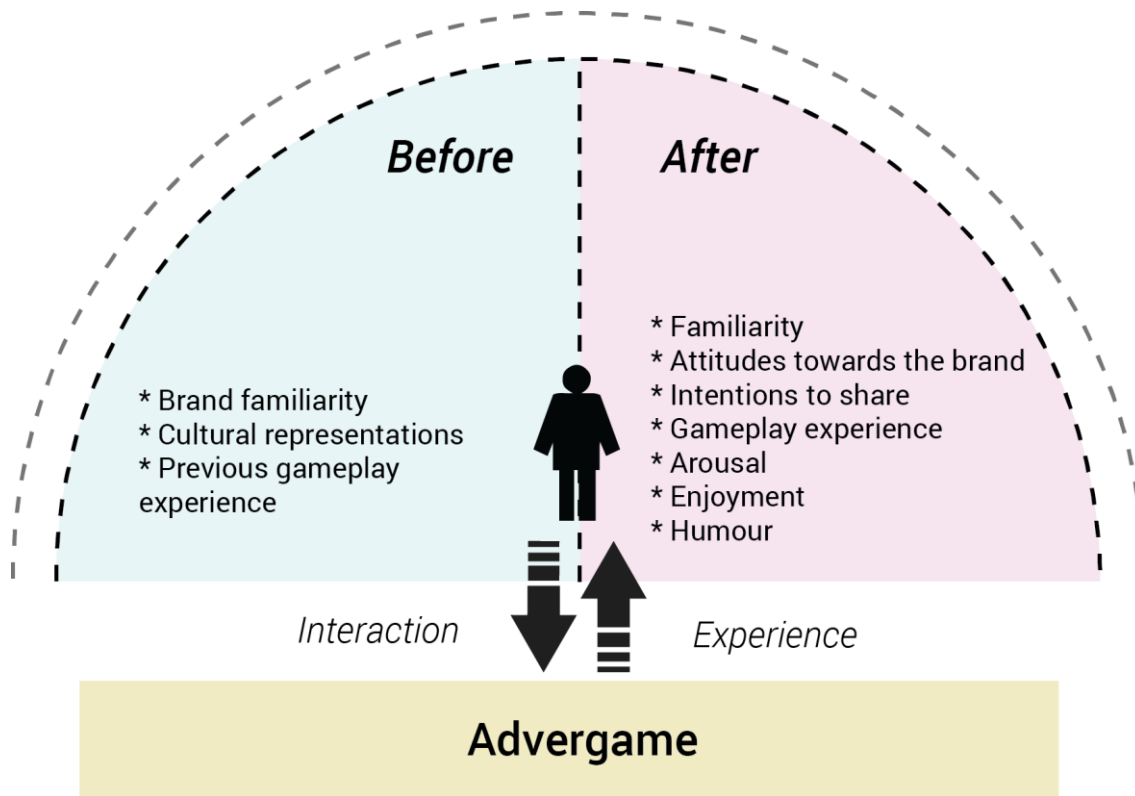
Figure 10-2 Slice of the CAKE: before and after gameplay experience
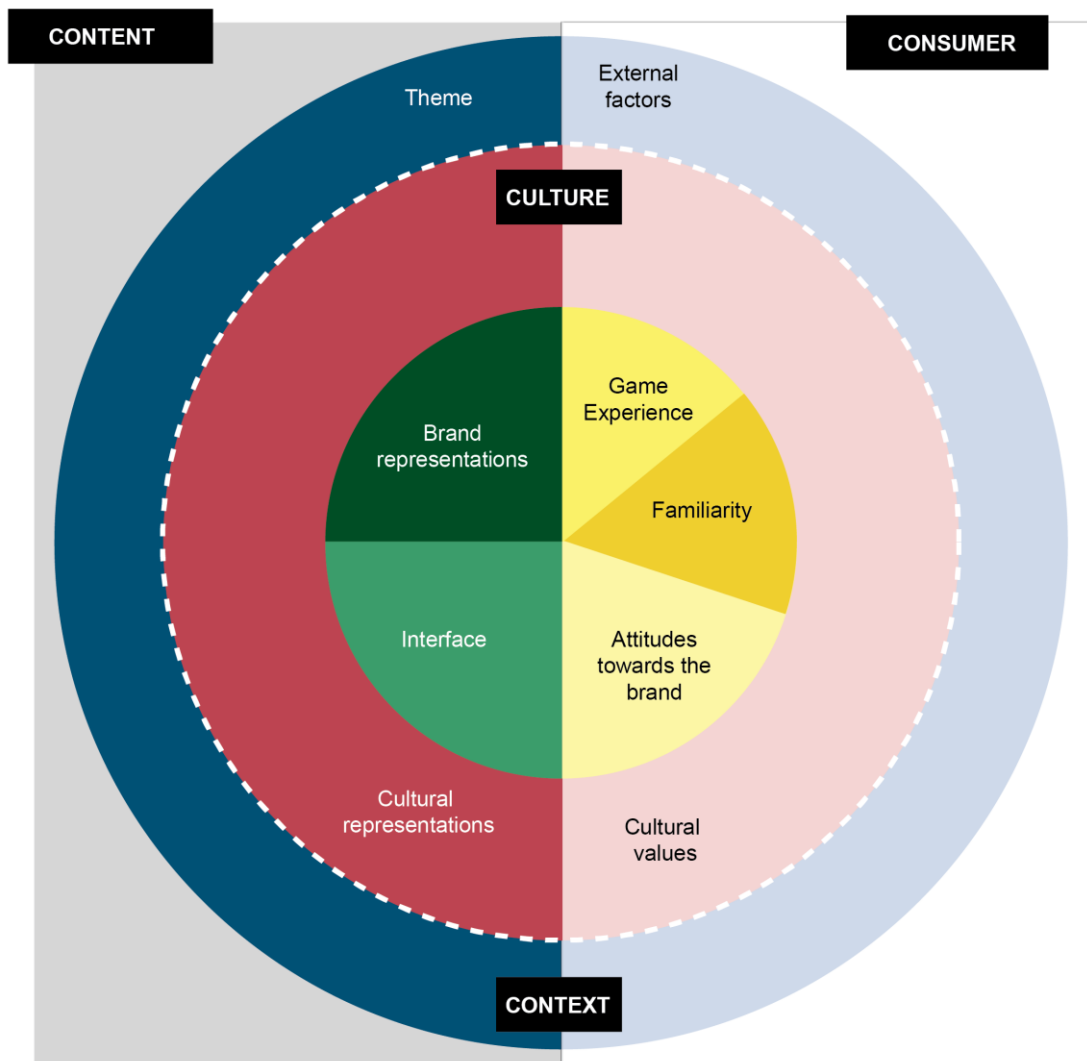
Figure 10-3 The CAKE framework revisited

10.3   Summary

As the findings highlighted, there is a weak communication between the advergames that are on the market and the perceptions of people from Brazil and the UK. For this reason, it is necessary to situate the CAKE framework as a tool that incorporates user experience design and the integration of the advertising message with the game content.

The CAKE framework was improved with the addition of familiarity, humour, virality and previous gameplay experience. Other aspects were added and refined. For example, the CAKE framework had a double arrow, indicating a two-directional interaction between the game and the consumer/player. This relationship was upgraded (see Figure 10-2) to before and after gameplay.

Another aspect was refined: the representations of the brand and the cultural representations. Considering that cultural representations reflect values, following the perspectives of Luna and Gupta (2001), symbolic representations could be incorporated by the advergame (see Figure 4-2 in Chapter 4). Thus, this reflects the strategy to include cultural aspects within the game, while also following the principles of localisation.

As represented in Figure 10-3 and expanded in The identification and description of each component of the CAKE framework employed in order to compare Brazil and the UK in the context of the influence of advergame design in consumer behaviour illustrated by Table 10-1 and Table 10-2 offer guidelines for recommendations on how to implement and evaluate the framework.

Considering this, the next chapter provides an application of such recommendations, metrics and the implementation of the framework, supported by a case study and advergame design.

Table 10-2, other elements and components were added: previous game experience, familiarity and virality. Moreover, elements such as humour and virality were added in the CAKE framework under other main elements, such as advergame experience and advergame effectiveness.
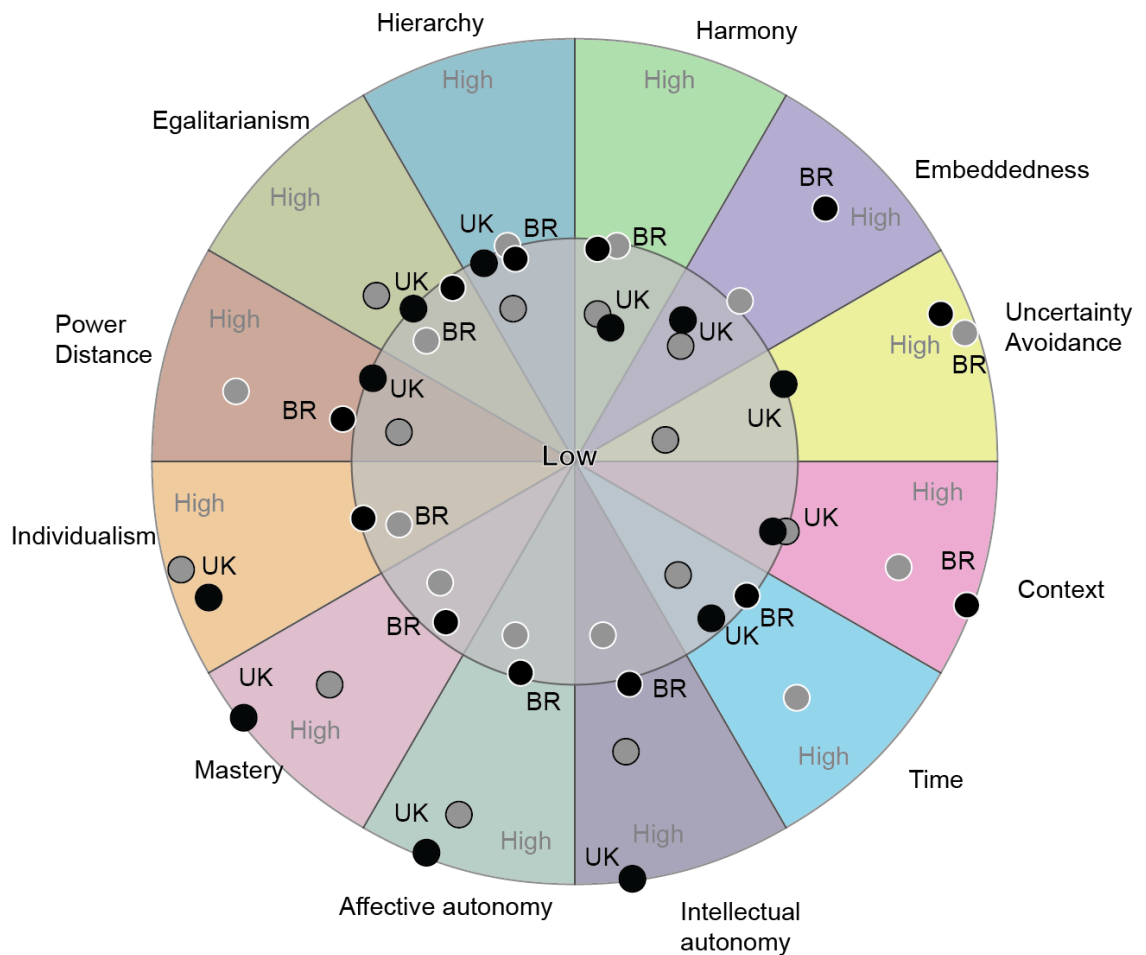
Figure 10-4 New position of cultural dimensions from Brazil and the UK after the comparative study (black dots = new position; grey dots = old position, based on Figure 6-3)

After underlining and validating the CAKE framework components, it was possible to address design recommendations for the implementation of advergame design across cultures, in particular for Brazil and the UK. For example, after the comparative study utilising the CAKE framework, it was possible to spot a change in previous cultural dimensions gathered from literature in cross-cultural studies (Hall 1981; Schwartz 2006; Hofstede 2001). Figure 10-4 illustrates the shift from expected cultural dimensions (grey dots) to a new positioning of those cultural values (black dots) in the context of advergames and consumer behaviour through the utilisation of the CAKE framework. It is possible to perceive a concentration of dots in the middle area between high and low cultural values. This shows that in some aspects like hierarchy, for example, Brazil and the UK are very homogeneous. On the other hand, in other dimensions such as intellectual and affective autonomy, Brazil and the UK showed a high variation. This could suggest that the CAKE framework may not only help us to understand such differences and similarities, but also that there are cultural dimensions that should be carefully considered before designing advergames for Brazilian and British consumers.

As mentioned in section 10.1, the comparative study between Brazil and the UK revealed the variations in British and Brazilian cultural dimensions and the application of the CAKE framework in order to guide this comparison. These variations helped to highlight two aspects: (1) CAKE framework components that were included and (2) the effect of all the CAKE framework components in Brazil and the UK (see Table 10-1).

Table 10-1 A summary of the comparison between Brazil and the UK using the CAKE components

Component	Before the study		After the study	
	Brazil	UK	Brazil	UK
Attitudes towards the brand	Brazilians tend to be more loyal to brands	British are not as loyal to brands as Brazilians and might not care if brands disappear	Brazilians showed a preference towards familiar brands	British could have a positive attitude towards a brand that fits their lifestyle
Virality	This component was added after the study		Brazilians feel motivated to play advergames that have a viral message and could become viral, particularly in social media	British feel motivated to play advergames that are already viral, but less so than Brazilians
Familiarity	This component was added after the study		The level of familiarity with the game content and the game mechanics is a high motivator to keep playing the advergame	Having a familiar theme could influence the British; however British consumers value autonomy, creativity and curiosity
Advergame experience	Brazilians would prefer advergames that evoke experiences related to the look and feel of the advergame, collective messages and hierarchy	British would prefer advergames with high levels of mastery and social causes incorporated by the advergames	The level of advergame experience could influence Brazilian consumer behaviour, particularly if the advergame has an engaging story and high-quality graphics	The level of advergame experience could highly influence British consumer behaviour. British consumers valued autonomy, challenge and game mechanics
Previous game experience	This component was added after the study		Having previous game experience could influence advergame experience as it could evoke familiar associations with the game mechanics; for Brazilians this could be a good association	Previous game experience influenced British consumer behaviour as British game players showed more experience than Brazilians
Cultural representations	There would be different cultural representations in the game that would influence Brazilian/British consumers		Associations with cultural aspects could be a strong motivator	Associations with cultural aspects might not influence

	differently (e.g. Brazilian/British colours, characters, social media integration, brand integration, etc.)		for Brazilians if considering the familiarity level; the advergame should be translated; the advergames were similar	British consumers; the advergames were similar
Cultural values	Uncertainty avoidance, high context, hierarchy, power distance, collectivism	Autonomy, mastery, low context, egalitarianism, individualism	Uncertainty avoidance, high context, collectivism	Autonomy, mastery
Brand representations	Low integration between the brand and the game	High integration between the brand and the game	The study showed that brand representations were highly dependent on the brand category	
Advergame interface	High-quality graphics, compelling story, character design	Clear goals and objectives, simple advergames, rules	High-quality graphics, compelling story, character design	Graphics should have good quality, but the game should also have good mechanics
Advergame theme	The message is related to the brand and it has a story	The message could reflect social causes	Could reflect a viral theme or popular theme	Might not need to be popular, but should have meaning and significance
External factors	Highly dependent on external factors: people, events, politics, etc.	Less dependent on external factors	Could be related to local events	Might not influence the advergame design in the same level as for Brazilians

The identification and description of each component of the CAKE framework employed in order to compare Brazil and the UK in the context of the influence of advergame design in consumer behaviour illustrated by Table 10-1 and Table 10-2 offer guidelines for recommendations on how to implement and evaluate the framework.

Considering this, the next chapter provides an application of such recommendations, metrics and the implementation of the framework, supported by a case study and advergame design.

Table 10-2 CAKE framework layers, components and elements after comparing Brazil and the UK

Consumer layer			
Component	Description	Elements	
Attitudes towards the brand	Thoughts, beliefs, perceptions and opinions about a brand	• Could be negative or positive; favourable or unfavourable • Influenced by brand familiarity	Validated and updated

Component	Description	Elements	
		• Related to evaluations towards the brand • Influenced by positive or negative game attitudes/experience • Can be explicit or implicit; explicit is more about evaluations, whereas implicit is about automatic associations • Before and after gameplay	
Virality	The capacity of the advergame to become viral	• Reflects actual behaviour • It could be a reflection of culture or a reflection of advergame enjoyment	Included
Familiarity	Associations, sense of familiarity with advergame structure elements	• Associations with the brand identifiers/brand representations/ brand familiarity • Associations with the context of the advergame (theme) • Associations with cultural representations (colour, sound, assets, rules, story)	Included
Advergame experience	The experience after advergame interaction	• Enjoyment and satisfaction after gameplay; could be positive/negative • Arousal • Flow experiences • Humour	Validated and updated
Previous game experience	Previous experience playing games (any type of game)	• It is related to gaming knowledge • Could influence people's attitudes towards the game	Included
Cultural layer			
Component	Description	Elements	
Cultural representations	Symbolic elements that represent and respect cultural values	• Colour, graphics, typography and scenario • Avatar design (if applicable) • Symbols (including icons) related to a culture • Stories related to a culture • Rules that reflect a cultural paradigm	Validated in terms of advergame assets
Cultural values	Consumer's personality and social norms	• Symbols • Heroes • Rituals	Validated

		• Cultural dimensions	
Advergame content layer			
Component	Description	Elements	
Brand representations	The integration between the brand and the game	• Brand material: logo, objects, colour, sounds, spokes-characters and packaging (if applicable) • Represents the brand message	Validated
Advergame interface	The interactive point between the consumer and the advergame	• A reflection of advergame structure, content, message, culture and context • Includes usability, visual aesthetics, game world and WIMP elements • Includes the advergame theme, brand and cultural representations	Validated
Context layer			
Component	Description	Elements	
Advergame theme	The strategy of the advergame message	• Can be integrated in the advergame structure • It is part of the advergame strategy • Relevant information for members from a particular culture/group	Validated
External factors	Social, political and economic aspects that influence people from a nation/group	• Games industry maturity • Advertising policies • Economy	Validated

Chapter 11:   Case study: Advergaming Design

Following the previous chapter, it was possible to validate the CAKE framework elements through the relationship between advergame experience and consumer behaviour, enhanced by advergame design elements. The current chapter describes the development of a case study based on the metrics of the CAKE framework (see previous chapter, section 11.1), followed by the design of an advergame, in order to address the following research question:

> *RQ3: What is the connection between advergame design, advergame experience and consumer behaviour when comparing Brazil and the UK?*

RQ3 states that it is necessary to understand the connection between advergame design and cross-cultural consumer behaviour. For that, it is essential to design metrics that could help to measure such effects based on a map of advergame design elements for Brazil and the UK. Thus, it is possible to ask

> *RQ3a: What are the metrics of differences in consumer behaviour, advergame experience and advergame design when comparing Brazil and the UK?*

As stated before, game experience and attitudes towards the brand are the two important elements that underpin cross-cultural consumer behaviour. Therefore, these are expected in order to design such metrics of the CAKE framework.

11.1   Metrics

For the categorisation of the CAKE metrics, it was necessary to follow a systematic structure. According to Fenton (1991), metrics of software quality can be categorised through use, factors and criteria. Thus, the CAKE metrics follow a defined structure of use, measurement factors and suggested implementation.

    a)   Cultural values (Cultural layer)

The measurement factor related to cultural preferences is *familiarity with the representative elements inside the advergame*. This is consistent with the FAMILIARITY element in the CAKE framework (see Figure 10-3). For example, representative elements related to culture could be visual assets, such as colour, graphics, typography and scenario, including symbols and icons, rules and stories.

Metrics: familiarity with advergame colour scheme; advergame graphics (e.g. symbols, icons, typography); advergame scenario; advergame rules; advergame story

Suggested implementation: incorporation of familiar or preferred colour scheme, graphics and scenario inside the advergame interface; incorporation of familiar or preferred rules and story in the advergame structure

b) Brand representations (Content layer)

The measurement related to the content layer is a combination of brand representations, advergame theme and cultural representations. As culture and context are being measured separately, the content layer in this case is related to the brand. A determinant of attitudes towards the brand could be the *brand familiarity,* which is implicit (e.g. by association). Therefore, the metrics are:

Metrics: brand familiarity

Suggested implementation: incorporation of a familiar brand inside the advergame structure and advergame interface; associations with brand identifiers inside the advergame; integration between the brand and the game

c) Advergame theme (Contextual layer)

The advergame theme is a way to connect with consumers through contextual factors and external aspects. This implies that in the advergame content, there is a relationship with relevant themes and events (e.g. World Cup, Carnival, etc). Therefore, the metrics for this element are:

Metrics: familiarity with advergame theme

Suggested implementation: incorporation of a familiar theme inside the advergame structure and advergame interface

d) Advergame effectiveness (Consumer layer)

Advergame effectiveness is directly related to consumer behaviour. This includes attitudes towards the brand (which could be favourable or not) and behaviour, which could be sharing the advergame (*virality*). As supported by the literature (Faber & Lee 2008), a positive gameplay experience could lead to a positive attitude towards a brand, so the advergame experience could be a way to induce such behaviour. In addition, sharing the advergame may be only possible if the advergame provides a sharing button. Therefore, the metrics and implementation for this element are:

Metrics: attitudes towards the brand; intentions to share the advergame; humour; previous gameplay experience

Suggested implementation: share button inside the advergame; the advergame provides effective interaction in order to provide a good advergame experience, including feedback loops (related to *advergame experience*).

The metrics presented in this section are implemented in the next section, guiding the advergame design.

11.2   Advergame design

The strategy was to design an advergame utilising Brazilians' colour preferences identified in previous research (Madden et al. 2000). Game objects and scenario were also designed in order to fit the Brazilian culture. This process is explained in this chapter. If colour and graphics meet their preferences, arguably Brazilians would feel more familiar with the game interface design, and therefore would have positive attitudes towards the game and the brand.

For the advergame prototype[2], three steps were followed through a semiotics approach: identification of brand representations, content strategy and metaphor selection. The process followed the perspectives put forward by Fullerton (2008), with goal setting, idea generation, concept formalisation and prototypes. As the approach of this study implies an interpretation of the advergame content, semiotics was presented in order to provide symbols and signs that are embodied by culture. The CAKE framework shows the incorporation of cultural representations and brand representations into objects inside the advergame. Therefore, it is important to assure that the representations inside the advergame are informing the intended advertising message. For this reason, the utilisation of semiotics could support exploration of those three aspects promoted by the CAKE framework. The design approach follows the perspectives of Niemeyer (2003), through iconic, indicial and symbolic references about the featured brand.

The selected brand for the advergaming design was the *Fairtrade* Mark. Reasons for this choice are:

- Considering the *Greendex* score created by *NatGeo*, Brazilians are in fourth position and British are in fourteenth position in terms of sustainable consumption (National Geographic & Globescan 2014). This score takes into account different aspects of

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[2] The researcher thanks Dr. James Stallwood for guidance and help while coding the advergame for this research

consumer behaviour, including the purchase of environmental-friendly products, which includes products with the *Fairtrade* Mark. For example, British consumers are not very keen to purchase environmental-friendly products, because of their cost (National Geographic & Globescan 2014). Hence, there is a variance between Brazil and the UK.

- In the UK, *Fairtrade* has a strong presence through the *Fairtrade* Foundation. There is also a *Fairtrade* organisation in Brazil. The mark is not from one country only, so this could provide a more neutral perspective about the brand.

- The incorporation of *Fairtrade* products in the daily lives of citizens is part of the objectives of the Olympic Games legacy, according to the report from Soil Association et al. in 2007 and the plan for the 2016 games (Rio 2016™ Organising Committee 2013). London was the Olympic host in 2012 and Rio de Janeiro is the Olympic site in 2016. This aspect illustrates the context of *Fairtrade* in both countries.

Table 11-1 The components and elements of the CAKE framework implemented in the advergame

Consumer layer		Elements in the advergame
Attitudes towards the brand	Thoughts, beliefs, perceptions and opinions about a brand	The brand (*Fairtrade*)
Virality	The capacity of the advergame to become viral	Link to share the advergame
Familiarity	Associations, sense of familiarity with advergame structure elements	Colour choice, sound, symbols in the advergame, scenario
Advergame experience	The experience after advergame interaction	Simple advergame, click mechanics
Previous game experience	Previous experience playing games (any type of game)	One-level advergame, simple interaction
Cultural layer		
Cultural representations	Symbolic elements that represent and respect cultural values	Colour choice, sound and symbols in the advergame, scenario
Cultural values	Consumer's personality and social norms	Symbols; Colour preference
Advergame content layer		
Brand representations	The integration between the brand and the game	Logo, objects, colour, sounds
Advergame interface	The interactive point between the consumer and the advergame	Visual aesthetics, game world and WIMP elements; Brand and cultural representations
Context layer		
Advergame theme	The strategy of the advergame message	Relevant information for members from a particular culture/group
External factors	Social, political and economic aspects that influence people from a nation/group	Economy

11.3   Representations of the brand

The chosen brand for this research is the *Fairtrade* Mark®[3]. According to the *Fairtrade Foundation* (Fairtrade Foundation 2013), there are at least three participants in the *Fairtrade* process: producers, organisations and final consumers. The aim of *Fairtrade* is to shorten this "bridge" between producers and consumers. *Fairtrade* values are optimism, respect, action, challenge and integrity, according to the organisation's report (Fairtrade Foundation 2013). This means that the advergame message needs to illustrate these aspects.

11.3.1   Advertising message

Fairtrade® is a certified Mark applied in different products, including coffee, chocolate, bananas and others. In this particular game, coffee is the product chosen to represent the concept of *Fairtrade*. According to the ISEAL Alliance report (2013), coffee was the first Brazilian product to be sold as *Fairtrade* (since 1997) and Brazil is the largest producer of coffee worldwide (EUROPEAN COFFEE FEDERATION (ECF) 2014). According to the *Fairtrade Foundation* (2012), Brazil accounts for 34% of the world's coffee production, but only 6% of this comes from *Fairtrade* organisations. Moreover, Brazilians consume 1.1 million tonnes of coffee, whereas the UK imports 184k tonnes (Fairtrade Foundation 2012). This shows that in Brazil, coffee is also part of the Brazilian culture.

For the advertising message, the strategy of this study is to provide metaphors that could express the concept of *Fairtrade*. In linguistics, Allbritton et al. (1995) tested associations evoked by "*metaphors-based schemas*", with the aim to identify the causes of sentence recognition. As explained by Allbritton et al. (1995), considering "*love*", a schema could be "*love is a physical force*" and the metaphors are "*physical forces*". In the case of *Fairtrade*, the current campaign aims to "*unlock the power*" of the community and bring social change (Fairtrade Foundation 2013). Therefore, the message to be transmitted by the *Fairtrade* advergame design is through empathy, putting the player in the role of the producer. Figure 11-1 illustrates the terms related to *Fairtrade*.

The advergame was designed to represent five metaphors related to coffee: collect, toast, make, sell and improve the local community. The message is the story behind the stages of the coffee production until its final consumption.

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[3] According to the Fairtrade Foundation, the Fairtrade Mark® can be used in promotional materials to "encourage people to buy *Fairtrade* products". Therefore, this study does not violate any intellectual property or copyrights (http://www.fairtrade.org.uk/en/what-is-fairtrade/using-the-fairtrade-mark)

Figure 11-1 Mind map of concepts related to the brand elaborated by the researcher based on the information about *Fairtrade*

11.3.2 Advergame theme

Initially, the idea of the game was to illustrate the process of coffee production, giving the player an overview of this activity. Therefore, the game concept involves one single scenario, with multiple interactions.
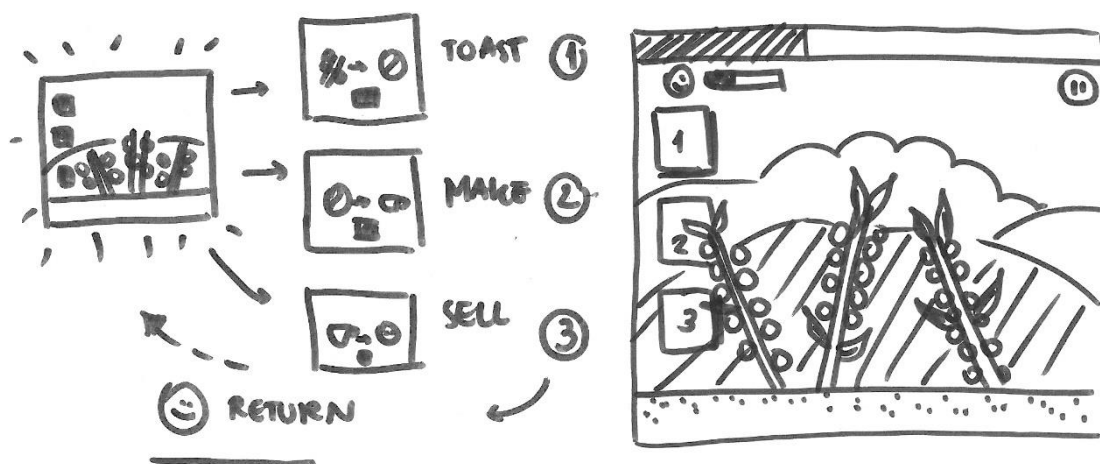
Figure 11-2 Storyboarding of the game theme and concept

In the game, the player is able to interact with the game scenario that illustrates a coffee farm, which is part of a local community (see Figure 11-2). The main game objective is to achieve the three principles of the brand proposition (social, environmental and economic) by collecting, toasting and selling the coffee to consumers. Each step gives something back to the producer (see Figure 11-3); for example, when the player makes the coffee and when the player sells the coffee (drink). Each stage gives one of the outcomes promoted by the brand.

Metaphor 1: Collecting coffee beans from the red berries (cherries)

Metaphor 2: Toast the beans

Metaphor 3: Make the Coffee (drink)

Metaphor 4: Sell the coffee

Metaphor 5: Social, environmental and economic impact
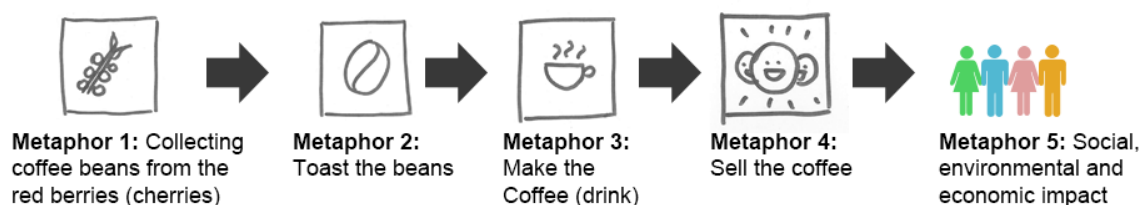
Figure 11-3 Selected metaphors that were incorporated in the advergame

For each action, the player depends on the previous one, as an action and reaction game, with clicks and quick feedback. The constraint of the game is the time. Players are exposed to one scenario, in which they have to transform as many coffee beans as they can in a short time (see Figure 11-3). For each step, the player receives feedback that is related to the outcomes of *Fairtrade* (social, economic and environmental). This is explained in the next section.

11.4   Rules, mechanics and gameplay

The mechanics of the game is about clicking and collecting items, within a time constraint. This is an online game, hosted in a website. Hence, the "clicks" represent the interactions in the game (gameplay). The time constraint limits the game to one minute. Although five to ten minutes could be enough for the player to get into an immersive state in serious games (Jennett et al. 2008), this advergame had a different design. The CC advergame is a game with one level and very simple interaction and goal (just "clicks"). Thus, for a short game with one level, one minute should be long enough for the gameplay experience.

The first screen of the advergame is a start screen, with a button to start playing the game. In this screen, the player can see the game title "*Colheita de Cafe*[4]", in Brazilian Portuguese or *Coffee Picking*[5], in English.

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[4] http://do-doc-ahedron.co.uk/research/br/onossocafezinho/or see CD-ROM for the full game
[5] http://do-doc-ahedron.co.uk/research/uk/onossocafezinho/or see CD-ROM for the full game

The metrics of winning the game are represented by the interaction with each stage of the coffee process. All the actions result in profitability, community happiness and environmental sustainability, represented by icons. This engine/feedback is important, as it reflects the impact that the players have in the game. Moreover, the feedback occurs in loops, depending on the level of player interaction. In the final screen, the player can see his/her achievements, represented by each of the elements (economic, social and environmental) and the total of points. The order of the feedback follows each stage: *environmental* for the "coffee-toasting", *economic* for "coffee-making" and *social* for "coffee-selling". As the "coffee-selling" depends on the previous levels, it carries more points. The final reward is the amount of points obtained.

11.4.1 Advergame stages

The buttons for interacting with the game are positioned on the left of the screen. The choice for that is the implementation of the scenario and prioritisation of the actions. First, it is necessary to "collect the red cherries", in order to proceed with the game. The button for the cherry is positioned on the top left. A visual test was undertaken with the buttons in the horizontal position, but it was found that the clicks could be confusing, as the player will be already clicking on the cherries (see Figure 11-4).
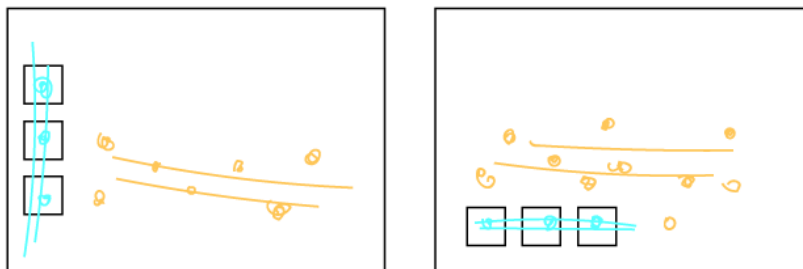
Figure 11-4 Button position

For each stage in the advergame, the players have to combine the elements and create new ones. For that, players need to click in the beans and click in the "transformation" buttons, which allows them to transform the coffee cherries into toasted beans, and then from toasted beans to the coffee (drink). Each stage gives feedback to the player, as environmental impact, happiness and money, according to each stage.

11.5 Implementing Familiarity

This section discusses the elements implemented in the advergame, in terms of colour, the objects and the visual assets. In this case, the idea is to provide a familiar scenario for one of the cultures in this study, which is, in this case, the Brazilian culture. These aspect and design

processes are explained in this section. Moreover, it is important to highlight that the advergame designed in this section did not include avatar/character design. Reasons for that are:

- Not all advergames have avatar/character design (e.g. puzzle games)
- Avatar design could evoke stereotypic associations (Salen & Zimmerman 2004), which would require further research
- Stereotypic associations related to human features need to be carefully managed
- The designed advergame does not require any avatar
- Culture could mediate character design preferences (Choi et al. 2015)

11.5.1   Advergame objects

The selection of the objects and forms that compose the game should be strategically designed in order to illustrate the metaphors explained in the previous section. The main game objects are coffee beans, coffee (cherries), coffee (drink), producers/farmers and coffee farm. Other aspects that need to be illustrated are the economic, social and environmental impacts.

How is coffee represented in Brazil? In order to understand this characteristic, the following strategy was employed:

- Analysis of coffee brands' website communications
- Image search of keywords utilising search engines

Local and global brands' communication strategies were analysed. For local brands, websites of the brands *Origem Brasil*, *Pilão*, *Caboclo* and *3 Corações* were studied. Starbucks was the global brand that was analysed.

The website of Origem Brasil[6] has the coffee represented in a small cup, with the coffee cherries in the background. Pilão[7] represents the coffee as the toasted bean with a small cup of coffee near the featured products. The 3 Corações[8] website also has the small cup of coffee, but with interaction of people and the coffee. Caboclo[9] also shows the coffee in a small cup and adds the coffee farm as one important feature (see Figure 11-5 for details).

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[6] http://www.cafeorigembrasil.com.br/
[7] http://www.pilao.com.br/
[8] http://www.cafe3coracoes.com.br/
[9] http://www.cafecaboclo.com.br/

Figure 11-5 Main Brazilian coffee websites

The Starbucks' website[10] has a strong presence of the Brazilian word "cafezinho", which means "little coffee" in Portuguese. The size of the coffee cup is small and the snacks that go along with the coffee are local, such as "pão de queijo" (cheese bun/bread) and "brigadeiro" (chocolate truffle). However, the utilisation of snacks was not found in the other websites.

The main finding in this analysis is the size of the coffee cup. The "cafezinho" is the little cup and this needs to be represented in this version of the advergame, with the aim of evoking associations with the "cafezinho". This enhances coffee as a drink.

Another area to be represented in the game are the game outcomes. As those elements look small on the screen, they need to be readable. To achieve this, icons were utilised. For this, the words environmental, economic and community were searched in Brazilian Portuguese and represented through symbolic figures. The next section explores this aspect in detail.

11.5.2   Symbol definition

In order to provide a guideline for the advergame interface design, a semiotic approach was employed following the perspectives in semiotics and design, borrowed from Niemeyer (2003).

According to Niemeyer (2003), associations can be applied within:

- *Iconic references:* form (representation of the product is associated to a group of products); colour association; material association; metaphor (the product is perceived as a reference to another object); style; environmental association (the object belongs to a particular environment): *e.g. The representation of the object is similar to the object*

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[10] http://www.starbucks.com.br/

- **Indicial references:** tool reference; colour (method to apply colour); form (utilitarian perspective); traces of usage; other traces; light and sound (technical function); usage sound (performance); smell; touch; algorithms: *e.g. The representation of the object is associated/connected with the object*

- **Symbolic references:** graphic (logo, name, numbers); colour (symbolic colour, iconic sign); symbolic form; position; symbolic material: *e.g. The representation of the object is the "agreed" representation of the object*

Considering this, the design process aims to provide the most effective communicative design. For that, the information gathered for the advergame is categorised in order to provide symbolic, iconic and indicial references (see Table 11-2).

Table 11-2 Semiotic recommendations for the design

Advergame elements for *Fairtrade*	Iconic	Indicial	Symbolic
Coffee (toasted bean)	Colour: brown	Oval form, smell of coffee	Toasted bean
Coffee (cherries)	Colour: red	Circle	Small circle
Coffee (drink)	Colour: brown; small cup	Smell of coffee, steam	Small cup
Environmental Outcome	Green colour. Sometimes blue. Trees, oceans	Green and blue	A leaf, tree, hand holding a tree, water drop or recycling symbol
Economic Outcome	Yellow, made of metal for coins	Sound of coins	$ Symbol, usually a coin (circle form)
Social Outcome	Community, people, holding hands	People talking, happy people	Community symbol: at least three people together
Coffee Farm	Fields, valleys	Green colour, country music, countryside	Green colour, stripes to represent the valleys

Each aspect presented in the advergame was previously researched in images banks and situated in mood boards (see Figure 11-6). The mood board on the left represents the image search for coffee (drink, toasted bean and cherries), coffee farm and the coffee producer. On the right, a search of iconic elements for environmental, economic and social outcomes is illustrated. All the searches were undertaken utilising the keywords in Brazilian Portuguese.

Figure 11-6 Mood boards utilised in the advergame design

11.5.3   Colour scheme selection

The advergame is designed following the standards for Brazilians, based on previous research in cross-cultural colour preference for branding (Madden et al. 2000). Considering this, it is expected that Brazilians would feel more familiar with the game colour scheme, as the advergame follows those standards. The game colour scheme is reflected throughout the whole scenario (Figure 11-7 and Figure 11-8) and in the UI characteristics.

Visual aspects are one of the factors that influence advergaming design across cultures, in which colour scheme plays a significant role. Previous research has identified Brazilian colour preferences in branding, from white (most preferred colour), blue and green to black, red, brown, purple, yellow, gold and orange (Madden et al. 2000). For the advergame design, this aspect is implemented through the choice of the colour palette.
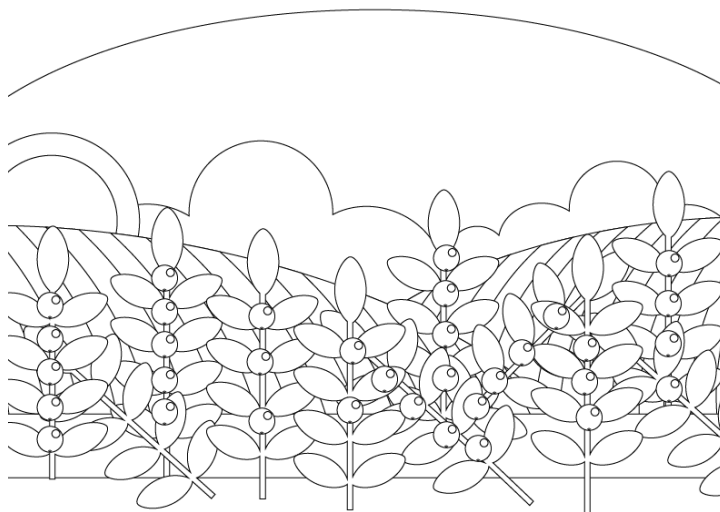
Figure 11-7 Game scenario without the colour application

The colour palette was generated utilising the software Adobe Kuler[11] and Adobe Illustrator for the design and manipulation of the image. The colour scheme for the games should follow RGB standards, as the game will be played on a screen.

Madden et al. (2000) identified the best colour combinations for Brazilians, represented by white and blue and red and black (see Figure 11-8). According to Madden et al. (2000), blue, green and white are associated with "beautiful" and "peaceful". As Brazilians tend to prefer white, blue and green, the background was painted in a blue colour, to represent the sky. The green was added to the farm fields. A cloud was also added in the background in order to build the connection between the blue and the white.
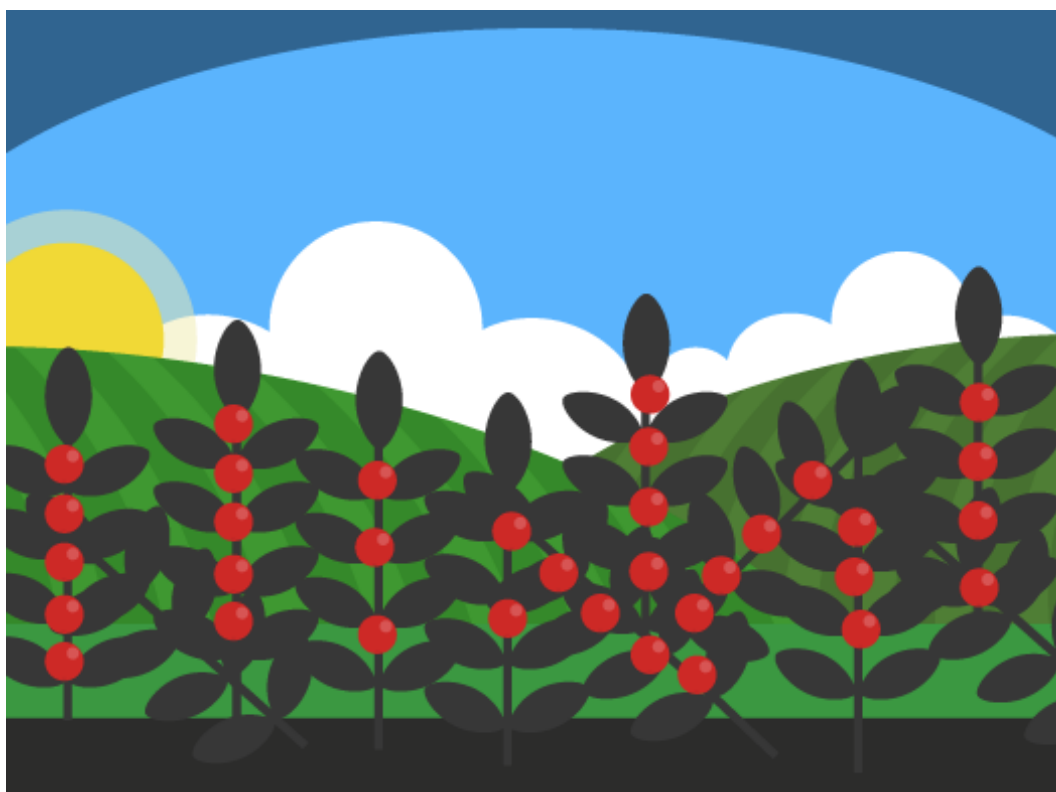
Figure 11-8 Colour combination of the screen

11.5.4   Music and sounds

Considering the semiotic analysis, two points can be included: music and sounds. The selected music aims to provide a sense of a farming/countryside environment. This choice is related to the game theme. The selected music has a pace that is not too slow, as the game is a time-related game. The reason for that is that with quick-paced music, the players could feel more aroused and excited in order to proceed in the game. The selected sounds, as for example, the sound a coin for

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[11] https://color.adobe.com

the economic outcome, could help to reinforce the association between the representation and the real object or concept (Pichlmair & Kayali 2007).

11.5.5   Typography

In Brazil, there is a tendency to communicate cultural aspects through popular culture, including vernacular typography (Finizola 2010). This aspect could bring familiar characteristics to symbolic references to the local culture. The choice for this approach is to convey symbolic cultural meaning through visual language. The typography is utilised in the first screen of the game and in the "Game Over" screen. The chosen typography is "1 Rial[12]", created by the designer Fatima Finizola (Finizola 2010) (Figure 11-9).
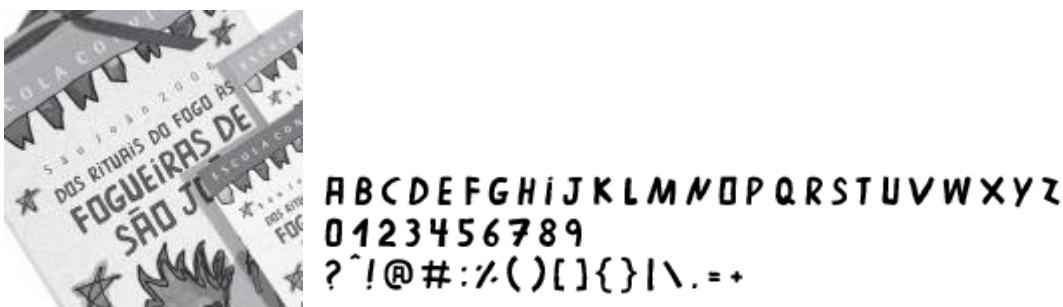
Figure 11-9 Rial typography (Finizola 2010)

11.6   Design Summary

The advergaming design followed a process of concept definition, game design and the implementation of visual familiar aspects, such as colour scheme and game objects in order to favour Brazilian consumers (see Figure 11-10). The game design process also combined a semiotic approach, in order to identify symbolic associations with the theme of the game. This process was supported by research of elements related to coffee and other coffee brands in Brazil, followed by a visual search of symbolic images of coffee in Brazil. The design decisions in this chapter were based on previous research (Madden et al. 2000) and on semiotics applied to design (Niemeyer 2003). The brand selected for the advergame design was *Fairtrade* and the design followed a high level of integration between the brand and the game. The *Fairtrade* logo was only shown at the end of the game (see Figure 11-11). The objective of the game was to make consumers aware of *Fairtrade*. The advergame was designed to work as a one-level game, with the duration of one minute.

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[12] The font can be downloaded from the link: http://www.crimestipograficos.com/?go=fonts#fonte_br1rial
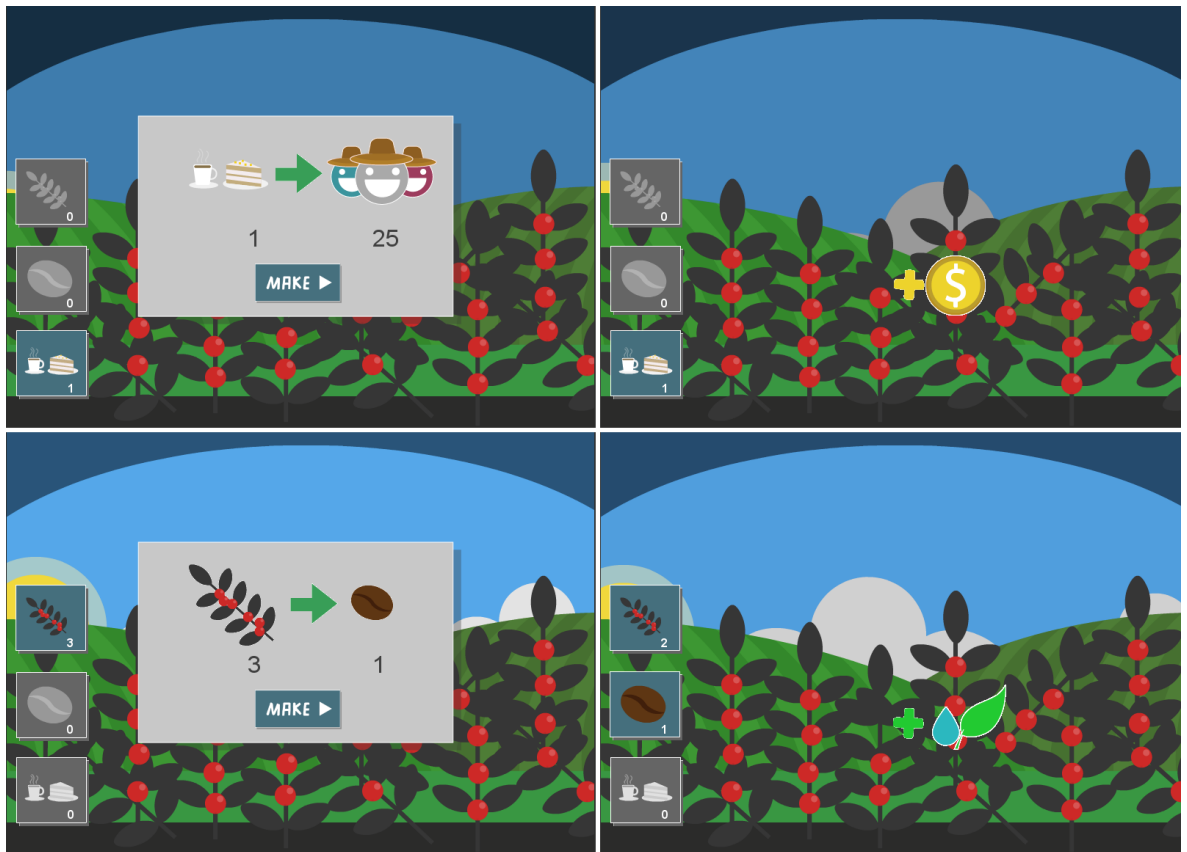
Figure 11-10 Levels of interaction of the advergame according to each button on the left

Figure 11-11 First and final screens

This chapter also presented the metrics of the CAKE framework that influenced the design guidelines of the advergame. Considering this, the CC advergame reflected the CAKE elements, combining both brand representations and cultural representations within the advergame structure, in particular the advergame interface. The next chapter discusses the research strategy.

Chapter 12:   Evaluation of the framework

In order to evaluate the effectiveness of the CAKE framework, three aspects were considered: advergame design, advergame experience and advergame effectiveness, related to consumer behaviour. Considering this, the following study aims to answer the current research question:

> *RQ3: What is the connection between advergame design, advergame experience and*
> *consumer behaviour when comparing Brazil and the UK?*

For the advergame design, four elements were considered: message, interface design, cultural representations and brand representations. All those elements were reflected in the advergame structure (e.g. rules, story, interface). The integration of those elements was already discussed in Chapter 11.

One of the main principles of the CAKE framework metrics is familiarity. As highlighted in Chapter 11, this aspect was strategically implemented through (1) the choice of colour scheme favouring the Brazilian preference according to a previous study (Madden et al. 2000); and (2) the objects in the game, such as coffee beans and the typography chosen for the title, that were also implemented in order to favour Brazilians through a semiotic approach (see Chapter 11).

Other principles of the framework are related to cultural preferences, which are measured by gameplay experience, the level of familiarity, and consumer behaviour. The main challenge in this scenario is how to measure this connection between advergame design, advergame experience and consumer attitudes. Therefore, the sub-question of RQ3 is:

> *RQ3b: What is the instrument that could measure differences in consumer behaviour,*
> *advergame experience and advergame design when comparing Brazil and the UK?*

In this chapter, an instrument, designed according to the CAKE metrics described in the previous chapter, is introduced. In order to implement this instrument and evaluate the CAKE framework, the advergame (designed in Chapter 11) was tested with two groups: Brazilians and British consumers. This characterises this study as experimental and exploratory, as it explores conditions between groups (Field 2013). The age group of the sample was 18-35 years consisting of both men and women, who were non-colour blind. The rationale for the sample

selection was discussed in Chapter 6. Reasons for this selection of non-colour blind population are related to (1) the advergame has incorporated colour schemes that could be preferred by Brazilians but not preferred by British; (2) one of the premises of this experiment involves the identification of this cultural preference enhanced by the colour scheme choice. Therefore, if an individual is colour-blind, the perception of colour will not be accurate, as a colour-blind individuals cannot identify the same colour differences that normal colour viewers could perceive (Jefferson & Harvey 2006).

Participants played the same game, with variations only in the translation of buttons and title. Since the advergame was visually manipulated to favour Brazilian preferences, this approach can be considered as systematic variation, as one condition is performed in order to favour one group (Brazilians) but not the other (British) (Field 2013). This could help to explain the premises of the RQ3.

RQ3 argued for a connection between advergame design, advergame experience and consumer behaviour when comparing Brazil and the UK. With this in mind, the strategy of this experiment was to design an advergame that could favour one culture (in this case the Brazilian culture) in order to understand this connection. Therefore, the experiment was divided into three levels: familiarity (advergame design), game experience (advergame experience) and advergame effectiveness (consumer behaviour). Those are explained in the next subsections.

12.1   Level of familiarity

Participants from both countries were invited to play the designed advergame through an online link. They played the advergame for one minute. As mentioned in Chapter 11, the advergame was designed in order to last one minute and it had constraints related to exploration and control. Before playing the game, the participants answered a questionnaire about their attitudes towards the brand, demographic questions and their previous playing experience. After gameplay, participants answered a survey with questions related to familiarity, gaming experience and advergame effectiveness. Five items defined the familiarity variable: context, narrative, brand, game assets and rules. Those items were added in the form of sentences and measured through a Likert-type scale. However, in the analysis, only three

elements were considered – game graphics, colour scheme and game scenario – as they were strategically manipulated within the advergame (see Chapter 11).

12.2 Level of gaming experience

The participants from both countries answered a questionnaire about their gaming experience, including aspects such as game enjoyment, arousal and humour. The questionnaire was designed according to the CAKE structure and previous instruments, such as the CEGEQ (Calvillo-Gamez, Cairns and Cox, 2009) for game enjoyment. Two other items measured arousal and humour (total of five for the whole game experience) (see sections 12.4.1.5 and 12.4.1.6). Considering this, three items measured gaming experience: enjoyment, environment and gameplay. An open-ended question was added at the end of the questionnaire in order to understand any other gameplay experience or collect further comments that participants might have regarding their experience while playing the advergame.

12.3 Level of advergame effectiveness

At the final screen of the advergame, the player was able to click in the button to "share" his/her score with friends through Social Media. The clicks on this button were also counted as an indicator of advergame effectiveness as they represent the actual shares of the advergame. The same questions related to attitudes towards the brand (employed before gameplay) were also asked after gameplay. Considering this, three factors defined advergame effectiveness: intentions to share, attitudes towards the brand, and actual shares.

12.4 CAKE Scale of familiarity and Questionnaire Design

The CAKE questionnaire borrows elements from previous instruments that have proven to be statistically reliable:

- CEGEQ (Calvillo Gamez et al. 2009)
- Arousal scales (Berger 2011)
- Attitudes towards the brand (Muehling & Laczniak 1988)

Based on the CAKE framework, the researcher developed the scale of familiarity presented in the questionnaire.

This questionnaire was divided in two parts: one before gameplay and the other after gameplay. For the first part, the participant answered six general questions, one question for previous game experience and one question for attitudes towards the brand. For the second part, the participant answered 27 questions. The total number of questions is 35.

12.4.1 CAKE scale of Familiarity

The main assumption of this research is that if members from a particular culture interact with a familiar advergame UI, their attitudes would be different – and possibly more positive. The CAKE framework denotes the influence of familiarity in the consumer behaviour during and after gameplay. The familiarity principle is composed of five factors (see Table 12-1):

- Context: the theme of the game and the cultural context. It could be reflected in special dates and cultural celebrations
- Narrative: the story of the game
- Brand: the representation of the brand. This aspect is integrated within the game and could have a high or low integration level. In the advergame "*Colheita de café" /Coffee Picking*, this integration is high (e.g. the player is rarely exposed to the brand logo)
- Game assets: the sound, music, visual elements, characters, buttons, scenario and game objects
- Game rules: the rules and mechanics of the game, represented through metaphors and the game genre

Table 12-1 The CAKE scale of Familiarity

CAKE Scale of Familiarity (eight items)		
Components	*Item*	*Content*
Context/Message	F1	*The game theme was familiar to me*
Narrative/Story	F2	*The game narrative provided me a sense of familiarity with the game theme*
Brand	F3	*I am familiar with the brand*
Game Environment	F4	*The game graphics (icons, symbols and objects) were familiar to me*

	F5	*The game colour scheme provided me a sense of familiarity with the game's theme*
	F6	*The game scenario provided me a sense of familiarity with the game's theme*
	F7	*The music and the sound effects provided me a sense of familiarity with the game's theme*
Game Rules	F8	*The rules of the game were familiar to me*
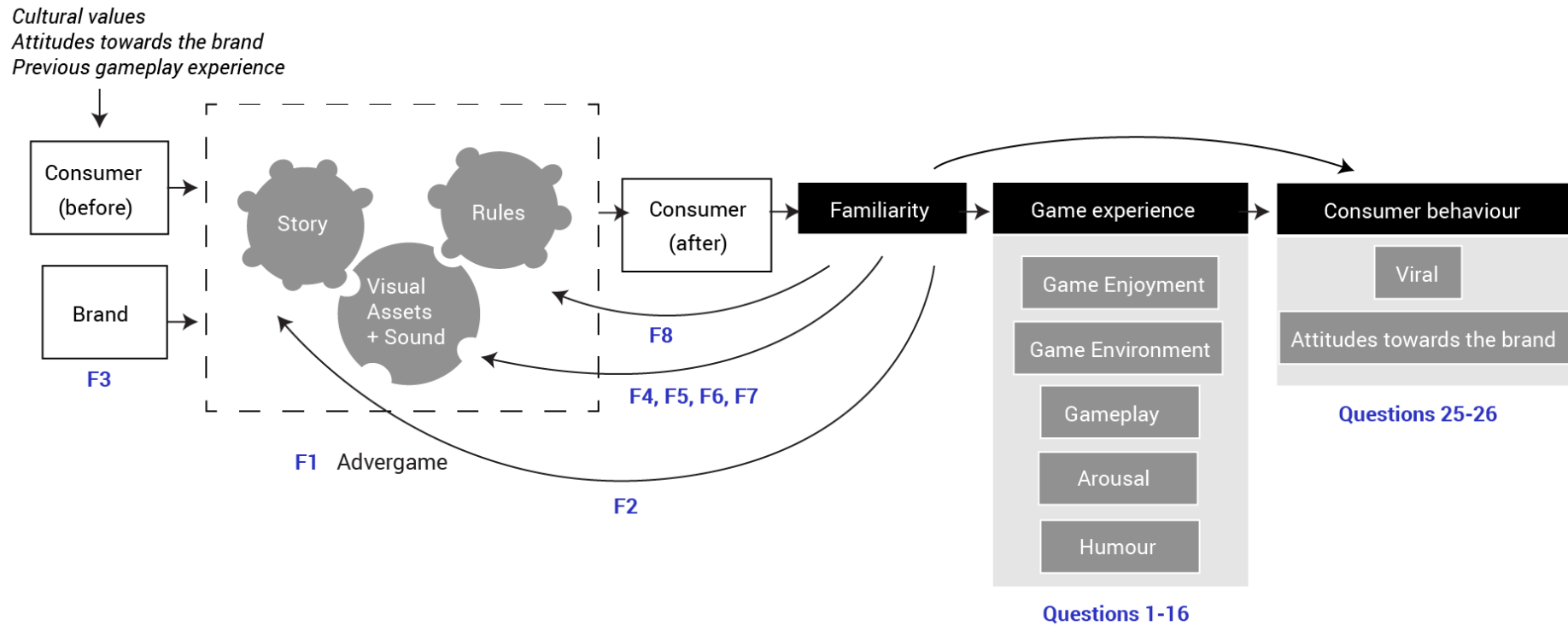
Figure 12-1 Representation of the CAKE framework fitting the CAKEQ

12.4.1 Questionnaire Design (CAKEQ)

This section explains the design of the questionnaire (CAKEQ), composed of general questions with demographic scales, game experience, game attitudes, attitudes towards the brand and advertising, familiarity, arousal and humour (see Figure 12-1).

12.4.1.1 General questions (six questions)

The questionnaire has a section for general demographic questions: *Age / Gender / Level of Education / Country / State / Colour-blindness*

The state question is relevant for the purpose of the research as Brazil is a large country composed of several states. Although the UK is smaller than Brazil, it is important to know if participants are from the South/North of England, Scotland, Wales or Northern Ireland, as differences could emerge. This information could help to map the cultural patterns within each country.

Level of education is another aspect that has been included as this could influence the way people perceive the advertising message (Friestad & Wright 1994).

Age is an important factor to know in order to assure that the sample fits the analysed population (e.g. adults, from 18-35 years old). Gender is also another crucial element to know, in order to avoid a sample that has more female participants than male or vice-versa. It was also necessary to ask if the individual was colour-blind. For that, three options were given: *No, Yes, I don't know*. The other demographic and general questions were open questions.

12.4.1.2 Previous Gameplay Experience (GXP) (one question)

The understanding of previous experiences with games is important as it can influence familiarity. Participants with more experience with games might find the advergame too easy, for example. This could influence the outcome of the research and should be measured. The question: *How often do you play games in an average week? (1=never, 7=daily)* was borrowed from Besharat et al. (2013).

12.4.1.3 Game experience (GAMEXP) (14 questions)

The measurement of gaming experience has been addressed by previous research utilising the CEGEQ (Calvillo Gamez et al. 2009).

The CEGEQ (Core Elements of the Gaming Experience Questionnaire), features 38 items rated on a 7-point scale (Cronbach's alpha = 0.794). The CEGEQ measures seven scales, such as enjoyment, frustration, environment, puppetry, control, ownership and facilitators (Calvillo Gamez et al. 2009). However, ownership, control and facilitators are elements that do not need to be measured in the present research; the objective is to measure *game enjoyment*. As Calvillo Gamez, Cairns and Cox (2009) highlighted, different scales compose the CEGEQ. In the current study, the scales of enjoyment, environment and gameplay were utilised. In total, three questions are related to enjoyment, five for environment (i.e. the way the game is presented to the player) and six for gameplay.

12.4.1.4   Attitudes towards the brand (ATTb) and (ATTa) (one question, three items)

Wise et al. (2010) have studied attitudes towards the brand utilising a standard semantic differential scale from another research (Muehling &Laczniak, 1988). As Muehling and Laczniak's (1988) questionnaire was proven reliable, this instrument was used in this research in order to measure the **ATTb** and **ATTa** (Cronbach's alpha = 0.93). According to Muehling and Laczniak (1988), the pairs Positive/Negative, Good/Bad and Favourable/Unfavourable are rated on a 7-point scale (one question for each pair). This scale was also used by Waiguny, Nelson and Marko (2013). Moreover, this scale was applied before the gameplay experience in order to compare the changes in the attitudes.

Following Muehling and Laczniak's (1988) scale for brand attitudes (alpha = 0.93), a 7-point scale of two bipolar attitudes is presented, using the statement:

My attitude towards Fairtrade is: bad-good; unfavourable-favourable; negative-positive (7-point scale)

12.4.1.5   Arousal (AROU) (one question, three items)

Self-report questionnaires have been applied in order to measure arousal. Berger (2011) utilised three 7-point scales of emotions – these were passive-active, mellow-fired up and low-high energy – to form an arousal index (Cronbach's alpha = 0.85).

For arousal, following Berger's (2011) scale, in three 7-point scales, players are asked:

How did you feel after playing the game? passive-active (7-point scale); mellow-fired up (7-point scale); low-high energy (7-point scale)

12.4.1.6   Humour (HUM) (one question, five items)

Humour is contextual (Gulas & Weinberger 2006). Metrics for humour tend to be very subjective and difficult to track. However, familiarity could trigger humorous attitudes (Gulas & Weinberger 2006). For this reason, humour is situated in the advergame effectiveness scale.

Previous research (Chattopadhyay & Basu 1990) has measured perceived level of humour through semantic referential scale of humorous-not humorous, funny-not funny, amusing-not amusing, playful-not playful, dull-not dull, boring-not boring. In order to measure humour after gameplay, the playful scale was discarded. Thus, for this measurement, the scale was a semantic referential of humorous-not humorous, funny-not funny, amusing-not amusing, dull-not dull, boring- not boring (*I've thought that the game was…*) (7-point scale).

12.4.1.7   Virality (VIRAL) (1 question)

Berger (2011) rated the intentions of participants to share content with friends and family, through a scale of 1 (not at all) to 7 (extremely) (Cronbach's alpha = 0.74) (*I've felt like sharing the game with my friends and family*). This aspect was added in order to measure the intentions to share the advergame.

This aspect is also measured within the game via a Facebook button for sharing the game with friends. The clicks on the button were counted within the game as quantitative data. Therefore, it was possible to compare the *intentions* to share with the *actual* sharing behaviour in further analysis.

12.4.1.8   Open-ended question about game experience (one question)

The objective of the open-ended question at the end of the questionnaire was to address and include any possible issues or suggestions that participants had while playing the advergame that the researcher could not measure through the closed-ended questions of the questionnaire.

The final questionnaire (CAKEQ) designed to evaluate game experience, advergame effectiveness and familiarity is composed of 27 questions after gameplay and eight questions before gameplay. The total is 35 questions. Table 12-2 shows the scales that are part of the final questionnaire to be disseminated ***after*** gameplay.

Table 12-2 Questionnaire scales after gameplay

Items	Scale 1 – Game Experience (16 questions, 22 items)	Scale 2 – Familiarity (eight items)	Scale 3 – Advergame effectiveness (twp questions, four items)
1-3	Enjoyment	-	-
4-8	Game Environment	-	-
9-14	Gameplay	-	-
15a, 15b, 15c	Arousal		-
16a, 16b, 16c, 16d, 16e	Humour	-	
17-24	-	Familiarity	
25	-	-	Viral
26a, 26b, 26c			Attitudes towards the brand
27	Open-ended question about gaming experience		
Total after gameplay: 27 questions with 35 items			
Total before gameplay: eight questions with 11 items			
Total questionnaire: 35 questions with 46 items			

12.5   Analysis and results

In this section, the results of the study are discussed, including the validity of the scales. In total, 64 people answered the questionnaire online (n=64). 65.6% from 18-25 years old, 45.3% male and 53.1% female; 73.4% were undergraduates. The data was analysed using the software SPSS.

Forty people from the UK answered the questionnaire online. However, in order to follow the limitations of the age group, five answers had to be deleted, as respondents were aged over 36. One participant did not check the consent form; thus these data were also deleted. Hence, in total, 34 answers were computed (n1=34; 6.3% from Hampshire and 6.3% from Surrey).

Thirty-three Brazilians answered the questionnaire online. However, following the age group limitation, one answer was deleted. Another two answers had to be deleted as one participant was not living in Brazil at the time and another participant did not check the consent form. In total, 30 answers were computed (n2=30; 39.1% were from Rio de Janeiro).

A Cronbach's alpha was employed in order to assess the reliability of the scales. The value for 38 items of the questionnaire (excluding the six items for demographic data and the open question) was 0.873, which means that the internal consistency is good ($0.9 > \alpha \geq 0.8$). The α value for the eight questions for the familiarity scale was 0.871, which is considered a good and reliable scale. Although familiarity was measured through eight items (five factors), only three factors were manipulated inside the game to favour the Brazilian culture: colour scheme, game objects and game scenario. The Cronbach's alpha for the three factors was 0.936, which shows a very good consistency.

When observing the scale for humour, while testing for Cronbach's alpha, it was found that it scored negatively. A negative value means that the scale is very weak. Although the prediction was that game experience could be measured by humour, the results suggest that this scale should not be reviewed. Cronbach's alpha test suggested that two items from the humour scale (dull and boring) should be deleted; therefore, 'dull' and 'boring' were deleted from the scale (item 16 in the CAKEQ). This improved the reliability of the whole questionnaire to 0.907 (36 items).

Before employing parametric t-tests, it was necessary to check for data normality. For that, Kolmogorov-Smirnov and Shapiro-Wilk tests were employed, using SPSS (Field 2013, p.185). The tests showed that all the items of the questionnaire were significantly non-normal. As the data were not normal, it was necessary to employ non-parametric tests to compare the means. Non-parametric tests are more robust and tend to look for fewer assumptions in the data than other tests do (Field 2013).

For the comparison of means, a Mann-Whitney (MW) test and Wilcoxon's rank-sum test were employed. For the calculation of the effect size of the MW tests, it was necessary to convert the test statistics to z-scores and then apply an equation that converts this z-score into an effect size (r), following the principles addressed by Rosenthal and Rubin (2003) and Field (2013). The Cohen's effect size (d) was not utilised, as the tests were non-parametric. The size of r could vary between small (below 0.3), medium (above 0.3 but below 0.5) and large (above 0.5).

12.5.1   Level of familiarity

When testing for familiarity levels, eight items were added to one single variable. However, considering that only three factors were incorporated by the game, another test was conducted, analysing the items separately. The non-parametric test showed that game theme, brand familiarity, game graphics, game scenario and game colour scheme were statistically significant. Only music, rules and narrative did not vary significantly. The results suggest that H1 is strongly

supported. Brazilians felt more familiar with the visual aspects (scenario, colours and graphics) (M=5.2, SD=1.69) than the British did (M=4.25, SD=1.59). This variation was statistically significant (p=0.015, z=-2.230, r=-0.27) (see Figure 12-2). This represents a small to medium effect for this variation.

12.5.2 Level of gaming experience

Enjoyment, environment and gameplay features measured gaming experience. Cronbach's alpha for this scale (14 items) was 0.682, which is acceptable. If the last item ("not like the scenario") is deleted, the score increases to 0.757, which is very good. Thus, in order to provide a more reliable scale, the analysis suggests the deletion of this item. With that, the whole CAKEQ, now with 35 questions, was improved to 0.916, which is excellent. Thus, 13 items composed the variable GAME.

While testing for correlations, there was a statistically significant and positive correlation of r = 0.668 between familiarity (M=4.58, SD=1.59) and game experience (M=4.15, SD=0.89) (see Table 12-3). This suggests that higher levels of familiarity (with game theme, game graphics, colour and scenario) indicate higher levels of game experience. This relationship has a large effect, since r = 0.668 (between 0.5 and 1.0) and p<0.5 (Cohen 1988) (see Table 12-3).
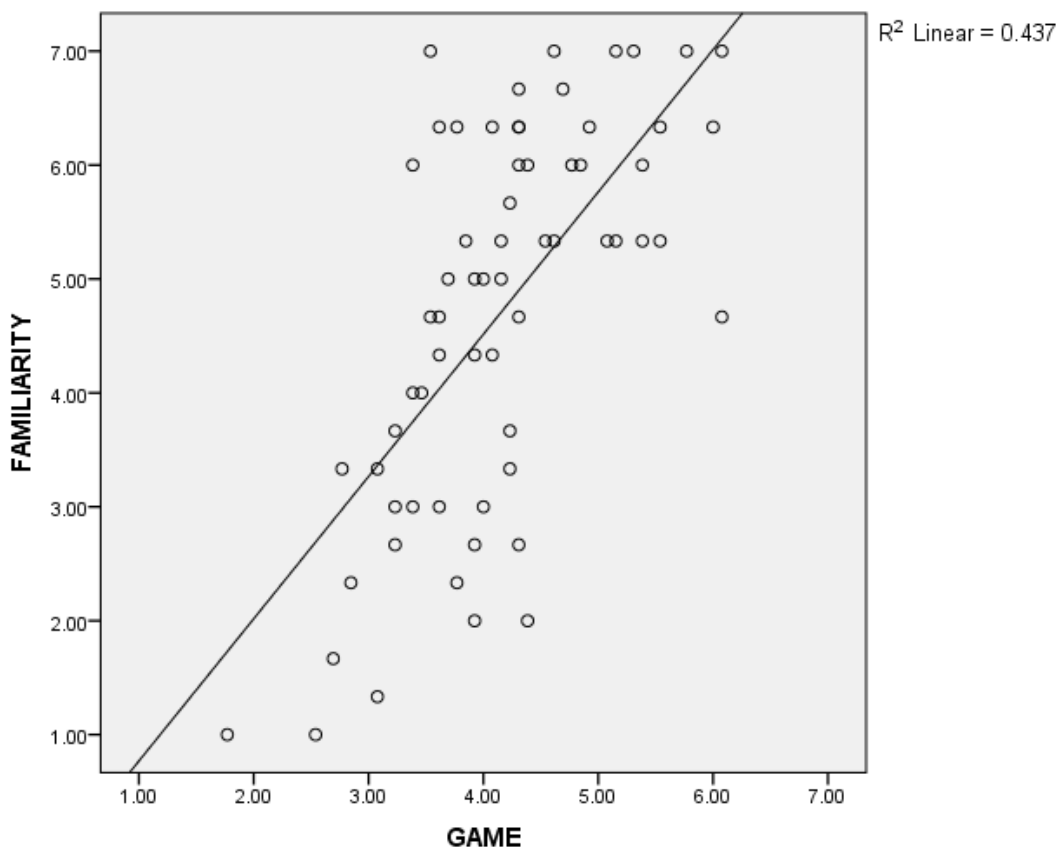
Figure 12-2 Plot illustrating correlation between Familiarity and Game Experience (R2 = 0.437)

Considering differences between Brazil and the UK, however, no statistically significant answers were computed (see Table 12-5). When testing for the items separately, only the item "play again" was statistically significant. Comparing the means, Brazilians would be more likely to play the game again (M=4.13, SD=2.17). Moreover, there is a positive correlation between playing again and advergame effectiveness (r=0.537). The results suggest that although familiarity could predict game experience, the game experience itself did not vary for British and Brazilians. They both had the same attitudes towards the game.

The same happened for the arousal variable. No statistically significant variance was found for this variable, comparing Brazil and the UK. However, familiarity had a statistically significant and positive correlation with arousal levels (r=0.326), but not too strong, as it has a medium effect.

Table 12-3 Correlations coefficients (r) and the variables

	1	*2*	*3*	*4*	*5*	*6*	*7*
1 FAMILIARITY	1						
2 GAME + HUMOUR + AROU	.543**						
3 AE (ATTITUDE + VIRAL)	.405**	.598**					
4 HUMOUR	.452**	.842**	.491**				
5 ATTITUDES (after)	.323**	.245	.783**	.173			
6 VIRAL	.332**	.697**	.833**	.597**	.308*		
7 GAME	.661**	.794**	.611**	.542**	.365**	.610**	
8 AROU	.326**	.841**	.436**	.476**	.141	.542**	.582**

12.5.3 Level of advergame effectiveness (AE)

AE is defined by attitudes towards the brand and sharing the game. The Cronbach's alpha for this scale was 0.849, which is very good and reliable (four items) (see Table 12-6).

Considering differences between attitudes towards the brand, there was a statistically significant difference between Brazilians and British after (p=0.025) and before (p=0.016) playing the game. However, no statistically significant variance in sharing the game was found. Considering the use of the 'share' button for the game, only five Brazilians (16%) clicked on the share button. Eight British participants (23%) clicked on the same (one) button.

Table 12-4 Multiple regression

Model		Unstandardised Coefficients		Standardised Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.024	.527		1.945	.056
	GAMEXP	**.662**	**.150**	**.537**	**4.427**	**<.001*** **
	FAMILIARITY	.092	.098	.114	.937	.352
a. Dependent Variable: AE						

When testing for correlations, there was a statistically significant and positive relationship between familiarity and AE (with sharing the game) (r=0.428), p<0.05. This suggests that AE increases when familiarity is high. The same was found for game experience (including arousal) and AE, with a significant and positive relationship (r=0.616), p<0.05. However, there were two variables as predictors, so it was necessary to employ multiple regressions.

Looking at the coefficients separately, game experience is statistically significant, as p=<.001, when p<0.05 (see Table 12-4). However, familiarity was not statistically significant (p=0.561). This means that game experience is stronger than familiarity while predicting AE (see Figure 12-3).
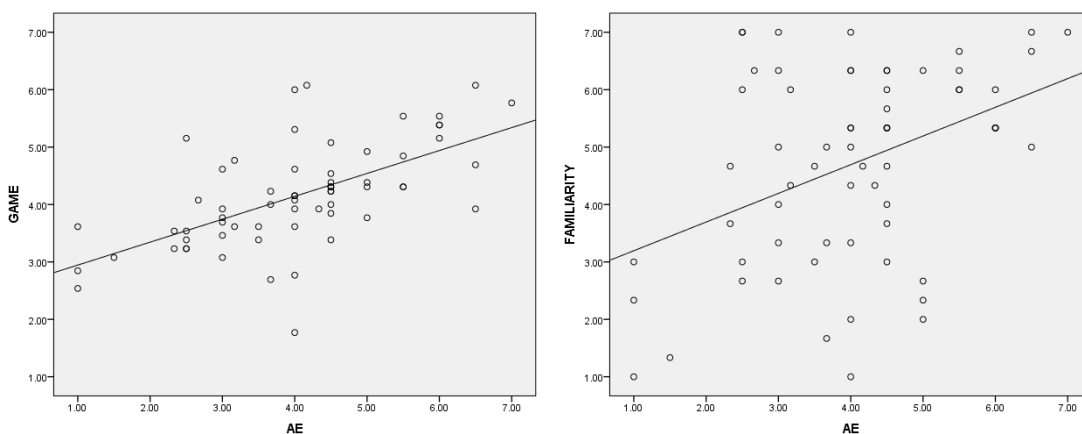
Figure 12-3 Plot illustrating the correlation between game experience and AE (left) (R2 = 0.373) and familiarity and AE (right) (R2 = 0.164)

Although Brazilians and British did not have the same level of sharing the game, their attitudes were different. While comparing the means from before-after attitudes, the results suggest that Brazilians had favourable attitudes towards the brand, while the British had less favourable attitudes towards the brand after playing the game (see Table 12-5). This difference is statistically significant (p=0.025, z=-2.241, r=-0.28) and the effect size is small to medium.

12.5.4   Other effects

When analysing the responses from the open-ended question, only six answers were added. These were short sentences and they represented single suggestions towards the advergame design that could not be generalised by the researcher.

While comparing the Brazilian and the British samples, it was possible to spot a variation in the frequency of playing games. On the scale of 1-7 (never-daily), the mean for Brazilians was 3.30, whereas the mean for British was 5.21. However, this variation did not statistically influence the study.

While looking for familiarity effects separately, it was possible to see that being familiar with game objects and graphics had a considerable effect (p=0.006, z=-2.768, r=-0.346), if compared to scenario (p=0.013, z=-2.483, r=-0.310) and colour scheme (p=0.046, z=-1.998, r=-0.24) (see Figure 12-4 and Figure 7-6 in Chapter 7 for the hypothesised model before the experiment).
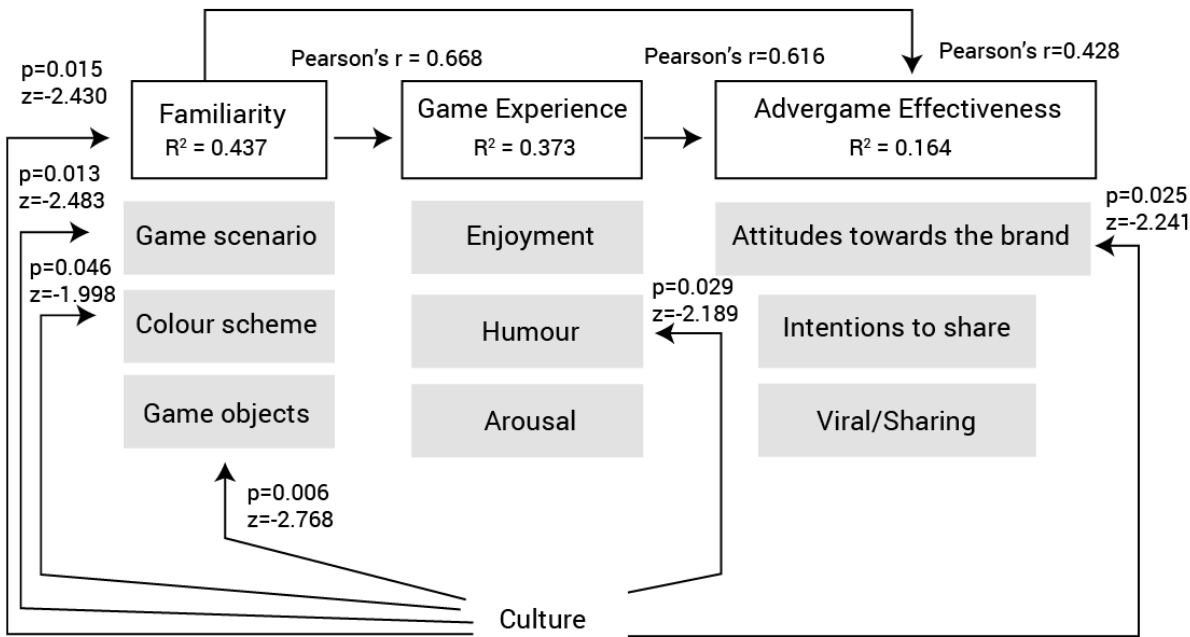
Figure 12-4 Research model and the results

Considering humour, Brazilians found the game funnier than the British did (p=0.029, z=-2.189, r=-0.277). This could suggest that familiarity with visual aspects could also enhance humour.

One factor that was not included in the game but had an effect on advergame effectiveness and game experience was brand familiarity. The variation of Brazilian and British responses was statistically significant and with a large effect (p=<.001, z=-3.981, r=-0.49). There was also a positive correlation between brand familiarity and AE (r=0.483). British were more familiar with

the *Fairtrade* brand (M=5.12) than the Brazilians were (M=2.73). However, although this familiarity with the brand could influence AE, British had less favourable attitudes towards the brand after gameplay. This suggests that they probably did not like the game and did not feel familiar with the visual aspects of the game. It is also important to mention that although they were not familiar with visual aspects, this might not be the factor that caused less favourable attitudes towards the brand. As the variable GAME is a stronger predictor of AE, this suggests that the British did not like the game at all. Those perspectives are discussed in the next section.

Table 12-5 Attitudes towards the brand before and after playing the game

Country		ATTITUDES (before)	ATTITUDES (after)
UK	Mean	**5.9020**	**5.7745**
	N	34	34
	Std. Deviation	1.15624	1.49684
Brazil	Mean	**4.9333**	**4.9667**
	N	30	30
	Std. Deviation	1.70732	1.63381
Total	Mean	5.4479	5.3958
	N	64	64
	Std. Deviation	1.50978	1.60233

12.6   Discussion

This study proposed that familiarity with visual aspects would influence attitudes towards the brand and intentions to share the game, while comparing Brazilians and British responses. It was hypothesised that visual familiarity is defined by cultural variables. Both groups played the same game; however, the visual interface favoured Brazilians in terms of colour, typography, scenario and objects. The results showed that both Brazilians and British had the same game experience (no statistically significant variance was found), rejecting H3. Still, British and Brazilian attitudes towards the brand were different before and after playing the game. This suggests that other effects that are not related to the game experience influenced brand attitudes. There are two possibilities: brand familiarity and visual familiarity. British had less favourable attitudes towards the brand (*Fairtrade*) after gameplay, if compared to their score before gameplay. The British were also more familiar with the brand than the Brazilians were. Brand familiarity moderates implicit attitudes towards the brand (Waiguny et al. 2013). Thus, as Brazilians were less familiar with the brand, it is possible this could be moderated by the advergame content (and the visual

elements embedded in the game), which supports Waiguny et al.'s (2013) propositions that advergame content influences attitudes towards the brand (if the brand is unfamiliar). This also suggests that Brazilians found an association within the advergame content that was positive. The main difference between Waiguny et al.'s (2013) findings and the results from this experiment is that Waiguny and colleagues analysed negative content (e.g. combat, violence), which was not analysed in the current study.

In fact, this association could help to address RQ3, showing that visual elements in advergame design can influence advergame effectiveness. One point, however, needs to be discussed. The British still had more favourable attitudes towards the brand than the Brazilians did. This could be an effect of brand familiarity, which could not be controlled by the researcher before the study, unless the brand was proven unfamiliar or inexistent (fake). Although the attitudes from the British were still more favourable than those from the Brazilians, it was possible to notice a positive variation of Brazilian attitudes, if comparing the means of before-after gameplay. This aspect could suggest that familiarity with visual cues does influence consumer behaviour across cultures. However, H5 suggested that Brazilians would have more favourable attitudes towards the brand than the British after gameplay. Therefore, H5 could not be supported. On the other hand, this variation on the favourability of attitudes could still be seen as an important aspect. Thus, it is possible that familiarity with visual representations influences attitudes towards the brand in a positive way. This suggests that familiarity with visual cues might be subjective and shared among Brazilians. If Brazilians changed their attitudes after playing the game and if their gaming experience was the same as that of the British players, familiarity with visual aspects could be implicit and effective in terms of advergaming design. However, familiarity with visual aspects was weaker than gaming experience, while predicting AE. With this, H4 was rejected.

There is also a positive correlation between familiarity with visual cues and gaming experience (H2). However, this relationship was not enough to influence Brazilians and British differently in terms of game experience as they both reported the same game experience.

Considering cultural effects, Brazilians felt more familiar with the visual interface design through colour, game objects and scenario. This aspect supports H1, H1a, H1b and H1c. Although they felt more familiar with those features, it was not possible to identify a statistically significant variance between Brazilians and British considering their gaming experience. It is possible that players did not feel immersed in the advergame, as the advergame was just one minute long (Jennett et al. (2008) suggested five to ten minutes for immersion to occur; more details in Chapter 11). However, this experiment did not measure immersion. Therefore, it is possible that measuring immersion could help to give more insights about overall game experience.

Another important aspect to be mentioned is brand familiarity. British were more familiar with the brand rather than the Brazilians were. This aspect could have influenced the variations in the attitudes towards the brand between the two groups (British attitudes scored higher than Brazilians before and after gameplay). However, there were variances after gameplay. Brazilians were more favourable, whereas British were less favourable towards the brand after playing the game. Although this might be a limitation, only an experiment with unfamiliar brands could help to analyse this effect.

Elements that enhanced familiarity are related to cultural values and representations. In this scenario, this study showed that theories that involve cross-cultural HCI and cross-cultural advertising could be employed in advergaming design through particular aspects, such as game scenario, colour scheme and game objects. The CAKE framework is an integrated system of elements, which also includes advertising message, narrative, mechanics and context. This study showed the influence of visual interface design in advergaming effectiveness. Another possible experiment could address the other elements, manipulating them according to each cultural strategy.

Table 12-6 The CAKEQ scale after the study

Items	Scale 1 – Game Experience (13 items, α = 0.757; 19 items, α = 0.865)	Scale 2 – Familiarity (eight items, α=0.871; three items, α=0.936)	Scale 3 – Advergame effectiveness (two items) (α = 0.849)
1-3	Enjoyment	-	-
4-8	Game Environment	-	-
9-13	Gameplay	-	-
14 (with three items, α = 0.890)	Arousal		-
15 (with three items, α = 0.918)	Humour	-	
16-23	-	Familiarity	
24	-	-	Viral
25 (three items)			Attitudes towards the brand
Total: 35 items (CAKEQ) + 8 demographic questions + 1 open-ended question = 44 items			

CAKEQ Cronbach's alpha for 35 items = 0.916

Chapter 13:   Final Discussion

This research studied the influence of advergaming design in cross-cultural consumer behaviour, particularly for Brazilian and British adult consumers. Considering this, this thesis aimed to answer the following questions:

> *RQ1: What are the dimensions and components of the framework that integrates cross-cultural advergaming design and cross-cultural consumer behaviour?*

> *RQ2: What are the aspects of the advergame that could make people from Brazil and the UK have positive attitudes towards brands?*

> *RQ3: What is the connection between advergame design, advergame experience and consumer behaviour when comparing Brazil and the UK?*

By analysing several theories of culture, design, cross-cultural HCI and cross-cultural advertising, a framework was elaborated in order to provide an integrated direction for this issue. The *framework for Advergaming Design across Cultures (CAKE)* incorporates elements from the literature review, including consumer attitudes, brand representations, cultural values, advergame experience and advergame design principles. The CAKE framework was validated through a content analysis and interviews with game players. After the validation, aspects related to familiarity were added to the CAKE framework. In order to validate the CAKE framework, a case study was designed. For that, the advergame *Colheita de Café (CC)* was developed, incorporating symbolic elements inside the advergame through a semiotic approach, favouring preferences from Brazilians. In order to measure the relationship between advergame design and the differences between Brazilians' and British responses, an instrument was developed (CAKEQ) and utilised to measure the impact of culture in advergaming design for this specific advergame.

The current chapter discusses and summarises the findings related to each research question, offering recommendations and implications for several fields, including suggestions for future work.

13.1   RQ1: The CAKE framework

What are the dimensions and components of the framework that integrates cross-cultural advergaming design and cross-cultural consumer behaviour?

The CAKE framework is a result of the combination of three main areas in the literature review: advergame effectiveness, cross-cultural HCI and cross-cultural consumer behaviour and advertising. From cross-cultural HCI and cross-cultural games, localisation (Chakraborty & Norcio 2009) and *culturalisation* (Edwards 2011) were the main themes identified. This suggested that game assets, game structure and game theme were principles that could be tailored for members from different cultures. Therefore, those principles were borrowed in order to provide an integrated framework. The layers identified in the literature review were culture, consumer, content and context. Those layers were opened in several components, separated by psychological outcomes (e.g. attitudes towards the advergame, advergame enjoyment and advergame experience) and the particular advergame design elements that could evoke such behaviours.

The CAKE framework was validated in the context of Brazilian and British cultural dimensions. While undertaking this, it was possible to polish the framework and integrate a few elements and components that were important for cross-cultural advergame design in Brazil and in the UK. Those elements were the capacity of the advergame to become viral (VIRAL), humour (HUM) and familiarity (FAMI).

The CAKE framework supported the ideas and concepts of localisation and *culturalisation* (Chakraborty & Norcio 2009; Edwards 2011). Moreover, the CAKE framework partially reflected the propositions from Khaled et al. (2006), who argued that changing aspects within a game could influence people's behaviour. The difference is that in the current thesis, the focus was on visual representations, advertising and brand messages, reflected by the comparison between Brazil and the UK. In fact, the associations and familiarity with visual aspects also corroborate Crilly et al.'s (2004) propositions that symbolic associations influence people's emotional state and behaviour. This also shows that stored information influences consumer behaviour (Pellemans 1971), reinforcing the idea that if advergames could trigger such previous memories, they might influence consumer decision marking. It also confirms that the CAKE framework is in line with the main cross-cultural HCI and design across theories of culture. If considering Luna and Gupta's (2001) framework , the CAKE framework showed the integration of values mainly through symbols, which supports Luna and Gupta's propositions. However, further research could help to give more insights about heroes and rituals within advergames across cultures. Thus, it is possible that marketing communications in different medias (and in particular games) the interplay of heroes, rituals and symbols might function differently than the traditional media. This is also in line with research that showed that the incorporation of familiar character design in advergame influences attitudes towards brands (Choi et al. 2015). For example, a study of the incorporation

of heroes in character design in advergames could be a useful application of the CAKE framework in the future.

From marketing across cultures perspective, the CAKE framework supported Luna and Gupta's (2001) framework of integrative marketing communications across cultures, particularly from the point of view of the influence of symbols in consumer behaviour. The difference between the current research and Luna and Gupta's (2001) is that although values are related to symbols, rituals and heroes, marketers and designers do not need to combine all the three elements to influence consumer behaviour. The current research also shows that Luna and Gupta's (2001) framework can also be used when looking at marketing communications that are digital and interactive, like advergames. This is in line with research of marketing communications across cultures in social media, reinforcing that interactive content should be tailored for people from different cultures, particularly when considering high/low context cultures (Tsai & Men 2014).

The CAKE framework also showed a holistic view of advergame design across cultures, which has not been undertaken previously. The propositions inferred by the CAKE also supported the integration with brand identifiers, suggested by Waiguny et al. (2013) through associations with the brand, including familiar and unfamiliar brands. The inclusion of humour in the advergame experience section was also supported by previous research in cross-cultural advertising (Hatzithomas et al. 2011; Bradley et al. 2013). This suggests that the CAKE framework goes along with previous studies that analyse the effect of humour and advertising effectiveness across cultures.

The CAKE framework also showed that "context" is crucial in terms of cross-cultural advergame design. The CAKE extended Greenfield et al.'s (1994) work, showing that gaming knowledge influences people's attitudes in terms of advergames across cultures. With that, the significance of external factors was revealed. This is also consistent with Walsh et al.'s (2014) work, who argued that in national-level marketing communications it is necessary to consider regulations, norms, institutions, economy, politics and laws in order to promote an effective advertising campaign.

13.2   RQ2: Cross-cultural elements

What are the aspects of the advergame that could make people from Brazil and the UK have positive attitudes towards brands?

In order to explore and validate the elements and elements that compose the CAKE framework, the following methods were employed through a triangulation approach (following the literature review):

- Content analysis of mobile advergames from Brazil and the UK
- Interviews with Brazilian and British game players

The triangulation showed the combination of psychological and behavioural aspects of consumer behaviour enhanced by advergaming design. Those are translated by attitudes towards the brand before and after gameplay (ATTBb and ATTBa), humour (HUM), arousal (AROU), game experience (GAMEXP), game enjoyment (GAME), virality (VIRAL), previous game experience (GXP) and familiarity (FAMI). The advergame elements that provided those aspects were advergame theme, advergame story, brand representations, advergame assets and advergame rules.

Although the content analysis showed the categorisation of the advergame elements, it was possible to spot a weak link between the advergame elements and the expectations of the game players from Brazil and the UK. This aspect was highlighted by the need for simplicity, contextual information and familiarity with game themes and game assets, which includes visual aspects.

While analysing cross-cultural elements within advergame design, the CAKE framework supported Hall's (1981) principles of context in terms of culture, with more emphasis from Brazilians in terms of associations and contemplative communications. This supported Hermeking's (2006) research about the differences in terms of preferences for visual and symbolic communications, which could be a reflection of Hall's (1981) dimension of context. As a matter of fact, the preference shown by Brazilians for viral themes could also be a reflection of this dimension and the idea of uncertainty avoidance and collectivism, reinforcing Hofstede's (2001) principles. The British on the other hand valued what they actually do in the game, not only the look and feel. This supported the concept of mastery, reinforcing Schwartz's (2006) principles.

13.3   RQ3a: Cross-cultural metrics of advergame effectiveness

What are the metrics of differences in consumer behaviour, advergame experience and advergame design when comparing Brazil and the UK?

As a sub-question of RQ3 (*What is the connection between advergame design, advergame experience and consumer behaviour when comparing Brazil and the UK?*), RQ3a aimed to underline the metrics of advergame effectiveness. Familiarity was a term and concept that emerged in the evaluation of the CAKE framework and became one important aspect in terms of cross-cultural advergame effectiveness. This term was added to the framework based on the

evaluation of the CAKE framework (Chapters 8-10) with Brazilian and British game players. After the addition of familiarity/associations, it was possible to explore this aspect through the CAKE scale of familiarity. In this thesis, familiarity was explored through visual aspects, particularly through the semiotic approach highlighted in Chapter 11. By utilising semiotics, the visual aspects that could favour Brazilians were incorporated in the advergame design. Those aspects were reflected in the advergame scenario, the colour scheme and the typography used in the advergame. Other aspects such as familiarity with mechanics, brand, game theme and story also composed the CAKE scale of familiarity. Although those aspects are important in terms of advergame design, they were not manipulated in the design process. Thus, in terms of influence of familiarity, only the visual aspects were included. In fact, the addition of familiarity with visual aspects was a reflection of Hall's (1981) cultural dimensions, in which Brazil tends to value visual communication more than verbal and direct messages. In addition, another aspect related to familiarity also influenced the outcomes of advergaming design. Brand familiarity was a strong factor while understanding the influence of familiarity in consumer behaviour. This supported Waiguny et al.'s (2013) work, showing that brand familiarity influences attitudes towards the brand. On the other hand, the CAKE framework suggests that brand familiarity might not be the only familiar aspect that influences consumer behaviour. Hence, while trying to address the research question, the relationship between visual familiarity and consumers' responses was mediated by cultural meaning. This was supported by:

- The incorporation of visual aspects into advergaming design in order to favour one culture
- The CAKE scale of familiarity

The concept of familiarity in cultural settings is consistent with Evers and Day (1997) and Crilly et al. (2004) if considering cultural preferences. This suggests that, for high-context cultures, dealing with preferred visual elements inside advergames could change people's perceptions without changing the overall game experience.

13.4   RQ3b: Instrument to measure advergame effectiveness across cultures

What is the instrument that could measure differences in consumer behaviour, advergame experience and advergame when comparing Brazil and the UK?

As a sub-question of RQ3 (*What is the connection between advergame design, advergame experience and consumer behaviour when comparing Brazil and the UK?*), RQ3b aimed to develop an instrument to measure advergame effectiveness across cultures, in relation to advergame design. A scale was designed based on the CAKE framework. The CAKEQ was designed in order to

analyse game enjoyment, attitude towards the brand, virality, humour and familiarity with several aspects inside the advergame. This included a combination of previous instruments (Calvillo Gamez et al. 2009; Berger 2011; Muehling & Laczniak 1998) and a scale of familiarity created by the researcher. In order to provide the cross-cultural metrics, an experiment was designed, including the gameplay of a localised advergame and a questionnaire. The main aspect spotted in this experiment was that both British and Brazilians had the same game experience, although the advergame was designed to favour Brazilians. However, the key aspect was that familiarity with visual aspects influenced attitudes towards the brand. This showed that implicit visual content did not influence game experience (against Hall's 1981 dimensions) but it affected attitudes towards the brand (in favour of Hall's dimensions). This showed that the approach undertaken in Chapter 11 was effective, but could be improved in order to influence game experience.

The current research also added another element to Wise et al.'s (2008) work; this influences positive attitudes towards the brand. For example, Wise et al. (2008) showed that attitudes towards the game (including game enjoyment) influence the attitude towards the brand, which could be stronger for advergames that have a high level of integration. Based on this thesis, it is possible to add familiarity with visual aspects as another element that affects attitudes towards the brand. In fact, although familiarity with visual aspects was crucial for advergame effectiveness in this thesis' experiment (see Chapter 12), gaming experience had a stronger influence in attitudes towards the brand, which also supports Wise et al.'s (2008) work. This aspect showed that changes in the advergame in fact influence cross-cultural consumer behaviour. Another aspect to mention is humour. Brazilians found the game funnier than the British did; this implies that context and culture work together as humour tends to be contextual, which reinforces Hall's dimensions and Hermeking's (2006) propositions.

The consistency of the whole CAKEQ was 0.916, which is very good (see Table 12-6 in Chapter 12). This suggests that the CAKEQ can be an effective way to measure cross-cultural advergame effectiveness, particularly considering the context dimension (Hall 1981). For example, cultures with high-contextual index might prefer and understand implicit and visual messages in advergaming design and therefore have favourable attitudes towards the brand and the game. The CAKE scale of familiarity had a score of 0.871 (for eight items) and 0.936 (for three items), which is proven statistically significant and could be used in further research.

13.5   Implications

The implications of this work are summarised according to several areas. First, repercussions for the research field are presented and argued. Second, propositions and suggestions for the games

industry are discussed through different points, particularly for cross-cultural game design. This is followed by the repercussions for both Brazil and the UK, including suggestions for policy makers.

13.5.1   For the field of cross-cultural design and games research

The application of this work in a cross-cultural scenario could benefit cross-cultural design research and games' researchers in different ways. First, the CAKE framework could be adopted and explored in terms of cross-cultural gaming research. The framework is a starting point for those who would like to explore advergaming design across cultures. Moreover, additions to the framework could be explored in the future. Other applications, including other cultural comparisons could be undertaken utilising this framework. For designers, the current research could also help to map psychological aspects into design processes. Moreover, the semiotic approach undertaken in Chapter 11 could be improved and employed in design strategies in game design during the concept phase. For example, the semiotics approach could include the design of avatars/characters. This would depend on the concept of the advergame. The CAKEQ could also be improved, particularly through the addition of measurements of game usability, game immersion and values in games. Considering this, in the future, the CAKE framework could be employed in different stages of game design like pre-design, prototype testing and post-production. For example, Bernhaupt (2010) stated that taking culture into account is part of the localisation phase in game development. In this case, the inclusion of culture in the development of advergames could be employed from concept definition until the final tests with the public. The semiotics approach of the CAKE could guide the concept design, during the pre-design phase of advergame development across cultures. After the design of the advergame, the concept and the prototype could be evaluated utilising the CAKEQ during prototype testing with potential consumers in order to understand if the advergame design elements were effective for the advergame version. Following the prototype stage, the first version should be evaluated through an improved CAKEQ, with a few additions like usability measurements, level of immersion and a selection of values that should be indicated in the advergame. With this, it would be possible to map the advergame elements that were effective, fix possible bugs and proceed with the final version of the advergame. Table 13-1 illustrates the possible improvements that could be explored during the game design phase, and future research that could guide such changes.

Table 13-1 CAKE and CAKEQ versions that could be used in each game development phase

	Pre-design phase	Prototype testing	First version of the advergame	Final version of the advergame
CAKE and CAKEQ versions	CAKE	CAKEQ	CAKEQ2	CAKEQ3
Applications	Map of cultural design elements based on previous research and semiotics	Map the relationship between the cultural elements, the advergame experience and consumer behaviour	Map of all design elements based on CAKE or an improved version of CAKE (e.g. CAKE2); fix bugs and usability problems	Validation of advergame effectiveness
CAKE improvements for future research	Character design, other visual elements	Map of all design elements based on CAKE, include usability, immersion and value measurements in the CAKEQ	Final map of all design elements based on CAKE or an improved version of CAKE (e.g. CAKE2)	Improved version of CAKEQ2 with measurements focused on consumer behaviour

13.5.2   For games and advertising industries

In terms of the games and advertising industries, the CAKE framework, the coding sheet and the CAKEQ utilised in this research could be improved and employed in order to analyse advergame design effectiveness across cultures. For example, the CAKEQ could be used in terms of games user research (GUR) for analysis of advergame design effectiveness across cultures in post-design and pre-design stages. The implication of the CAKE framework in this scenario relies on the application of localisation processes in advergaming design. As localisation is one important stage in game development and advertising across cultures, the current research could help to bring a more integrated approach for this stage. In addition, the comparison between the UK and Brazil could bring more knowledge for companies that expect to expand their markets in both countries. Furthermore, the semiotic approach utilised in this research could be improved and applied in different game design processes across cultures.

For marketing communications, the current research has also shown that familiarity with cultural elements is not the only factor that influences consumer behaviour across cultures. Brand familiarity was another important aspect to be considered in this case. Thus, it is the role of marketers to also plan an integrative marketing communications strategy, which may include not only advergames but also a wide range of different medias, making people more familiar with the brand as well as familiar with their cultural symbols.

13.5.3   For Brazil and for the UK

The current research brings important aspects in terms of cross-cultural consumer behaviour. First, it states that brand familiarity is important for both Brazilians and British. Second, it shows that visual aspects incorporated in the advergame are powerful persuasive tools as they evoke familiarity, despite the game experience. Considering cultural dimensions, the current research helped us to understand that Brazilians function in a high-context communicational approach; this was a reflection of visual familiarity and humour. Moreover, the present work helped us to understand that previous game experience also has an influence in advergaming design effectiveness. By listening to game players in interviews, this study also showed that British game players belong to a gaming culture, which reflects high levels of game literacy. The interviews also showed that although Brazilians are collectivists, this does not imply that Brazilians prefer to play together.

13.6   Limitations of this work

The main cultural dimension that emerged from this study was Hall's (1981) high-low context, which reflects the communicative feature of advergames. In terms of culture, it is possible that different games with other characteristics could be tested in order to map Brazilian and British differences in consumer behaviour. For example, advergame rules and storyline could have been localised in the CC advergame described in Chapter 12. In addition, other aspects that were not particularly localised in the advergame were music and sound effects. The integration of those aspects could have had a greater influence on the level of familiarity with advergame assets. Another limitation could be the rules of the CC advergame. The advergame was a one-level game, with no profound storyline and simple (click) game mechanics. Perhaps if the advergame was more elaborate, it would be possible to see differences in the gaming experience or a higher variance in the attitudes towards the brand. The possibility to have more choices in the game could have helped players to express themselves in the game. However, the focus of the experiment in this thesis was to evaluate the CAKE framework. It is possible that, in the future, this aspect could be analysed, resulting in cultural appropriation of the game (Sicart 2011), reinforcing the holistic characteristic of the CAKE framework. Still considering the limitations of the CC advergame, other aspects could have been culturally situated in the interface level. For example, stereotypic and different avatar representations could have been explored. It is expected that these implications could be looked at in the future. Furthermore, the CC advergame could have been localised for both Brazilians and British (two versions of the same game), in order to analyse the variations of design elements within each version of the advergame. This was not

considered in the final experiment, as the aim was to verify if cultural preferences and familiarity with visual aspects would influence cross-cultural consumer behaviour after gameplay.

Another limitation of this thesis is the method adopted to analyse cultural preferences and familiarity. Although the questionnaire had a good consistency, it is possible that a triangulation with qualitative methods, such as focus groups or interviews with game players, could have given more insights about the incorporation of cultural values within advergames. Moreover, other methods for data collection, such as psychometrics (Nacke et al. 2014) and eye tracking (Jennett et al. 2008), could provide more understanding about unconscious perceptions. Thus, this is expanded in the future work section.

Furthermore, considering the approach through semiotics for advergame design, it is possible that consumers could have been active participants in the design process, providing feedback and suggestions to the design through workshops and participatory research. Yet, this was not the aim of the thesis; however this will be addressed in future work, which is explained in the next chapter.

Chapter 14: Conclusions and future work

"Advergames influence and embed cross-cultural consumer behaviour" – this was the research conjecture argued in Chapter 5. The *Framework for Advergaming Design across Cultures (CAKE)* was created in order to illustrate this relationship. In this chapter, the conclusions of this research are discussed. For that, the CAKE framework is summarised and the main contributions are argued. A list of future work proposals is addressed and the propositions for further research are presented at the end of this chapter.

14.1 The CAKE framework: a summary

The CAKE framework emerged in order to integrate cross-cultural perspectives of advergaming design across cultures, particularly guided by the research conjecture, which proposes that *advergames influence and embed cross-cultural consumer behaviour*. For that, four terms were borrowed from theories of cross-cultural HCI, games, and cross-cultural consumer behaviour; those are culture, consumer, content and context.

In order to ground the CAKE framework, two cultures (Brazil and the UK) were selected and compared. Brazil and the UK differ in several aspects including the way the message is communicated (visual vs. textual), level of interactive autonomy, symbols of power, humour and structured rules. This was applicable in the current research in terms of advertising.

A triangulation approach was employed through the convergence of characteristics of advergaming design and responses from both Brazilian and British consumers. The result of this triangulation showed that familiarity with different aspects of the advergame, humour and virality should be included in the CAKE framework. Thus, the revised version of the CAKE framework includes psychological aspects such as attitudes towards the brand before and after gameplay, aspects related to gameplay (e.g. enjoyment and control), arousal, intentions to share the advergame, humour and level of familiarity. Moreover, other aspects were refined: context was expanded as the game theme and brand representations gained more focus, particularly because brand familiarity was one term mentioned by the interviewees. This aspect centred the CAKE framework on familiarity aspects. However, the challenge was to implement familiar aspects within the advergame. For that, the CAKE framework was also utilised to build a scale of familiarity, based on the game design elements spotted previously:

game mechanics, interface design, storyline, game theme and brand. As one expansion of the CAKE framework, the advergame *Colheita de Café (CC)* was built around visual aspects that could favour Brazilians through semiotics (Chapter 11).

Considering visual familiarity and its implications for cross-cultural consumer behaviour, the CAKE framework proved to be an effective tool to integrate and map psychological aspects in design elements. Those benefits are discussed in the next section.

14.2   Contributions

Four contributions were made by this research: the development of a framework that could address cross-cultural advergaming design, the cross-cultural comparison between the UK and Brazil, the implications for advergaming design, and the metrics.

14.2.1.1   The framework for Advergaming Design across Cultures (CAKE)

The CAKE framework is the main contribution of this research. The aspects that made this possible were:

- The integration of cultural influences in advergaming design research across cultures
- The incorporation of appropriate dimensions of cross-cultural HCI and cross-cultural advertising research in advergames
- The understanding of the effective elements of cross-cultural advergaming design
- The influence of advergaming design in cross-cultural consumer behaviour
- The analysis of those dimensions in real advergames

14.2.1.2   The comparison between Brazil and the UK (the validation of the framework)

One of the applications of the CAKE framework is the cross-cultural comparison between Brazil and the UK. The contributions made by this comparison were:

- The underlying of cultural preferences of Brazilian and British consumers
- The understanding of context (high vs. low) in terms of cultural dimensions
- The exploration of a gaming culture or game literacy/knowledge
- The comprehension of the role of brand familiarity in cross-cultural consumer behaviour, mediated by advergames

- The perceptions and attitudes of consumers from different cultures towards advergames and advertising in general
- The attitudes towards the brand
- The analysis of advergames from both cultures, leading towards a wider understanding of the applications of advergames and the games design industry in those two countries

14.2.1.3   The application of the framework in cross-cultural advergaming design

Another contribution of this research is the application of the CAKE framework though the lens of semiotics in order to provide a culturally-oriented design approach. The main aspects related to this contribution were:

- The map of the dimensions required to implement the advergame content
- The design process of incorporation of semiotics in advergaming design

14.2.1.4   Metrics of cultural preferences in cross-cultural advergaming design

Finally, another contribution made by this research is the set of metrics of cultural preferences, considering advergaming design. The elements related to this aspect were:

- The coding sheet utilised for the content analysis
- The CAKEQ, as a combination of previous research and the CAKE scale of familiarity
- The CAKE scale of familiarity, which could be implemented in several questionnaires or other instruments that aim to analyse cross-cultural aspects through the lens of familiarity with elements within the game

14.3   Future work

In the future, a few aspects of the current research could be explored (see Table 14-1):

(1) Metrics, including different methods to address user engagement, emotions, memory (short-term vs. long-term), unconscious behaviour, persuasion knowledge, familiarity and purchase behaviour
(2) Advergaming design, exploring the role of story and narrative design, contextual themes, different gameplay, different rules and different technological innovations
(3) Pre-design, addressing methodological issues before advergame design across cultures

(4) Expansion of advergaming applications, including sustainable consumer behaviour, social marketing, collaborative services, gamification in sustainability and social innovation, and advertising regulation issues across cultures

(5) Implications for other cultures and markets

Each future work application could be investigated in the level of brand innovation (e.g. metrics of brand equity, luxury brands, ethical brands) and social innovation (e.g. sustainability, behaviour change, governmental campaigns, collaborative services). Thus, advergaming design could be explored in a more holistic way Table 14-1.

Table 14-1 Future work and areas

Future work	Areas	Research Questions
Metrics	Eye tracking, physiological measurements, affective computing, *Neuromarketing*, brand equity, persuasion knowledge, memory, immersion, flow	How can visual familiarity in cross-cultural advergaming design be measured in a non-conscious level? How can advergaming design across cultures influence brand equity? What are the elements that make people from different cultures get more immersed in an advergame? How can flow and immersion be measured in advergaming across cultures? How does persuasion knowledge moderate advergame effectiveness across cultures?
Advergaming design principles	Digital storytelling, Rules and procedural rhetoric, Virtual Reality and Augmented Reality, Internet of Things	What are the aspects of digital storytelling that could be incorporated by advergaming design across cultures? What is the influence of VR/AR in advergaming design across cultures?
Methods for advergaming design	Workshops, ethnography, fieldwork, participant observation	How can designers build more effective advergaming design across cultures?
Extension of advergaming applications	Sustainable consumption, collaborative services, gamification, personalised marketing, viral	How can advergaming design influence sustainable consumer behaviour? What are the aspects of advergaming design that could be expanded for gamified applications?

	marketing, social network advergames	How can advergaming design increase sustainable consumer behaviour?
Other cultures and markets	Expand the investigation within LATAM countries (e.g. Chile, Mexico), Eastern countries (e.g. China, Taiwan), Western (e.g. European, Nordic and American); comparison between English speaking and Portuguese speaking countries; Luxury market; Children market; Elderly consumers market	What are the differences of consumers' responses after gameplay in different cultures (e.g. LATAM countries, Eastern vs. Western)? How can advergaming design influence the market of luxury brands across cultures? How can advergaming design influence elderly consumers across cultures? How can advergaming design influence young consumers across cultures?

14.3.1.1 Metrics of cross-cultural advergaming design and cross-cultural consumer behaviour

Considering metrics of visual familiarity, eye tracking could be used to measure each design element that influences cross-cultural consumer behaviour in a non-conscious level. In fact, the current research analysed explicit attitudes, which have a cognitive nature. However, Waiguny et al. (2013) argue that attitudes can be also implicit or affective. This opens an opportunity to analyse more affective attitudes and non-conscious towards brands. Hence, the analysis of non-conscious data and brain waves could be added to this investigation. This implies that cross-cultural advergaming design could be measured through the lens of *Neuromarketing*.

Another way to analyse those affective attitudes could be through memory. This could be analysed before (e.g. schemas) and after gameplay (e.g. recall). For example, previous stored memory about a brand (i.e. brand schemas) could influence attitudes towards the brand (Shelton & Gross 2010; Wise et al. 2008; Lee & Youn 2008). Although this could be explored under the flag of brand familiarity, previous memory about a brand could be expanded and measured through a more robust instrument.

Emotions are defined as neurophysiological responses that require a behavioural action, provided by information processes (Matsumoto & Juang 2013, p. 199). Feelings (or subjective

experiences), behavioural expressions, such as facial expressions, physiological reactions, such as heart rate, actions of movement and cognition are a few ways to measure emotional feedback. Understanding the function of emotions in human behaviour constitutes one of the foundations of *Neuromarketing* (Zurawicki 2010). Emotions can be also evoked by seasonality, including weather, time of the year and motivational levels. The influence of those types of contextual aspects could vary according to one's location. This could be also investigated in future research. The combination of physiological and questionnaires could be expanded and explored across cultures.

One important aspect that could be considered is the impact of cross-cultural advergaming in brand equity through the measurement of engagement. For example, brands with high levels of brand equity are expected to have a positive customer engagement (Keller 2001), particularly because brands with high equity have strong brand attachment (related to emotional aspects) that could inspire people to engage with them (van Doorn et al. 2010). By utilising Keller's model of brand equity, other metrics could be added to the CAKEQ.

Another aspect that could be included is the attitudes in advertising in general and their influence in cross-cultural consumer behaviour in terms of advergames. Although this theme was briefly mentioned in the interviews (Chapter 9), this factor could be integrated to the CAKEQ in the future. This could be targeted through the lens of persuasion knowledge (Friestad & Wright 1994), analysing the influence of cultural differences and attitudes towards advertising in general.

One area that could be addressed in the future is the integration and measurement of actual influence in purchase behaviour. In other words, the framework could go beyond attitudes and intentions to actual provide behaviour change. Issues related to sustainability and ethical consumption could benefit from this approach. This is important because there is an opportunity to investigate cognitive dissonance in consumer behaviour, particularly in terms of sustainability and ethical consumption. For example, consumers could intend to buy ethical products, but in the moment of decision, they might end up choosing what is cheaper. Thus, a gap between intentions and actual behaviour could be tackled in the future. As argued by Terlutter and Capella (2013), there is limited research regarding the impact of advergaming in actual behaviour, considering real-world actions, such as brand purchase. This could help to expand the implications of advergame design in the whole customer journey (see Chapter 2, Figure 2-2).

Furthermore, the research in advergaming across cultures could be expanded through the measurement of cultural values within the advergame. The CAKE framework provided the start of this mapping. However, it is still necessary to address the representations of a wider range of values that could be incorporated by the advergame. A starting point was undertaken by Flanagan & Nissanbaum (2014) through the analysis of ethics and political values within games. The next step would be a more holistic way to integrate and measure values through the CAKE framework, following the guidelines from Flanagan & Nissanbaum (2014).

14.3.1.2   Advergaming design principles across cultures

The CAKE framework integrated cultural preferences related to attitudes towards the brand and the influence of familiarity with visual representations inside the game. Other aspects that could be explored are the influence of digital storytelling and narrative design across cultures. Moreover, usability factors and ease of use could be investigated through a list of heuristics for effective cross-cultural advergaming design. This is strongly related to flow experiences and immersion. Moreover, it is possible that flow could be influenced by social factors and cultural significance, which could help the investigation of gameplay through the lens of symbolic interaction.

Storytelling is also very important as a rhetorical tool. For example, telling a story could influence other people's perception about the consumer's experience, particularly because it is related to empathy (McKee 2003). Thus, stories could also function as persuasive tools across cultures. This could be addressed by immersive investigations, such as fieldwork, workshops with participants and ethnographic research.

Other elements could be explored in the future. Brand familiarity was one important issue emerged in this research and should be explored in future work. A study comparing familiar vs. unfamiliar brands, including concepts like country of origin (COI) (Ranchhod et al. 2011) and ethical brands could be tackled. This could be also represented by different brand categories.

Another aspect to be considered is the influence of different avatar design and ethnical group representations inside advergames. Although not all advergames have avatars in their design, the incorporation of avatar design could make a link with Luna and Gupta's (2001) approach of "heroes" in cross-cultural advertising. During the course of this thesis, research has been

conducted considering character/avatar presence (Choi et al. 2015). Thus, the CAKE framework could help to expand such studies in a more holistic way.

In terms of game design, the advergame *Colheita de Café* (CC) could be improved by adding music and sounds from Brazil. This aspect could be tested in order to evaluate the priming effect while using stereotypic music inside the advergame. Other elements could be improved in the advergame, such as the inclusion of framing effects in a tutorial page or story, favouring Brazilian terms and storylines. Furthermore, a British version of the advergame could be designed in order to understand the differences/similarities in advergaming design.

Another aspect that could be tackled is the design of culturally-related heuristics for advergame design. Following the principles highlighted by the CAKE framework and heuristics for general interface design across cultures (Nielsen 1990), the design of heuristics for effective advergame design across cultures could be addressed in the future.

14.3.1.3   Methods for cross-cultural advergaming design

Other opportunities for future work are related to the pre-design stage. This could be an extension of the semiotics approach described in Chapter 11 with co-creative workshops. Those involve participatory design and the integration methods of co-creation with the CAKE framework. Methods of co-creation (Sanders & Stappers 2014) and participatory design (Khaled & Vasalou 2014) could be integrated with the elements in the CAKE framework. Thus, a set of toolkits and cultural probes could be created in order to provide and investigate more relevant interface design representations, stories and mechanics, based on the elements of the CAKE framework. Moreover, the investigation of this feature could generate insights about cross-cultural methods of game and advergame design. Thus, it is possible that for Brazilians game designers there is a different way of designing games, compared to the British.

14.3.1.4   Extension of advergaming applications

The participative nature of this paradigm could lead to the investigation of collaborative services. Concepts such as *crowdfunding* and collaborative services in small communities could benefit from advergaming design. In Brazil, collaborative services are emerging, particularly as a response to economic problems. In terms of the game, concepts like collective intelligence could be explored across cultures. People from different cultures might have different ways to engage in social environments. This aspect could also open opportunities for citizen science-

related activities promoted by different governments. Thus, in this scenario, national culture is crucial for the implementation of rules, laws and regulations. The role of advergaming may be extended to the awareness of social issues, including health and sustainability. For example, health-advertising campaigns could be better designed in order to encourage people to interact with the information.

In terms of sustainability, the opportunities for cross-cultural advergaming design are vast. First, sustainable consumer behaviour is influenced by culture. The current research showed that Brazil and the UK differ in their consumption patterns. This aspect could be expanded through principles that involve the creation of advergaming design with consumers and the further definition of metrics of advergame effectiveness for behaviour change. The application of the CAKE framework in scenarios such as sustainability represents a natural development of the current research. For example, the choice of local products could be a way to express the power of advergames. Instead of choosing a product that was created miles away from their home country, people would prefer to choose local brands and local food. This could give more value to local farmers and communities.

14.3.1.5   Other cultures and markets

Another natural development of this research is the application of the CAKE framework in other cultures. Examples of possible utilisation are comparisons involving Latin American countries, as for example Chile, Argentina, Brazil and Mexico; and Eastern and Western countries, including Europeans, Americans and Nordic cultures. With this, it would be possible to build a cultural map of cross-cultural dimensions applied in games, advertising, advergames, and consumer behaviour. The analysis of cross-cultural consumer behaviour could also be extended to immigrants; for example, the concept of enculturation, acculturation and cultural appropriation could be investigated in advergaming design. Members from a particular culture could adopt new behaviours when moving to a new country.

A further possible development is the application of the CAKE framework for people of different ages and different social economic backgrounds; for instance elderly consumers and child consumers. In terms of culture, this could help to explore the level of cultural significance built in for each age group. This would open the possibilities of advergaming design across cultures to another level. Considering this, the automation of the process of localisation of advergaming design could be explored. Algorithms that analyse people's behaviour while

interacting with the advergame could help to bring relevant content to people according to their cultural background, age group and interests.

Based on that, the development of advergaming design across cultures could also help to inform policy makers about regulations involving advertising content in games. For example, sugar taxes and other aspects should be respected, particularly in advergames that feature sugary and unhealthy food. Regulations might differ from country to country and this could be an issue for cross-cultural advergaming design.

Finally, another aspect to be considered is the adoption of new and emerging technologies involving games, such as mobile devices, Internet of Things (IoT) (e.g. sensors, connectivity) and Virtual and Augmented Reality technologies (VR/AR). For example, in a few cultures, trust and acceptance of new technologies could be a barrier in terms of advergame effectiveness and advergame design. In addition, this could reflect real-time marketing. Real-time marketing is about time and presence, including real-time content, through which marketers could learn from customers' interactions (Eslinger 2014). Furthermore, the consideration of social network advergames could be a point to be investigated in further research, particularly when considering Brazilian consumers. The creation of communities based on social network behaviour and advergames could help marketers to analyse the virality effects of advergaming design across cultures.

Table 14-2 Future work and research actions

Future work	Research Actions
Metrics	• Add metrics of brand equity to CAKEQ • Measure flow experiences (use existing questionnaires) • Combine physiological data, and qualitative and quantitative data • Include principles of *Neuromarketing* • Measure memory influences (short- and long-term) • Create metrics for actual consumer behaviour (e.g. purchase) • Create metrics of sustainable consumer behaviour
Advergaming design principles	• Explore the principles of digital storytelling across cultures • Investigate the role of avatar design in advergaming design across cultures • Investigate narrative principles and employ them in co-design methodologies • Test different levels of difficulty with players from different cultures • Add stereotypic music and sound to the CC advergame

	• Add framing and story in the beginning of the CC advergame • Redesign the CC advergame with British consumers and compare the differences/similarities • Develop a list of heuristics for effective advergame design across cultures
Methods for advergaming design	• Build advergames with Brazilians and British using the CAKE framework principles (co-design workshops with cultural probes and toolkits) • Observe consumers' shopping of sustainable products/fieldwork in Brazil and in the UK • Implement the co-design methodology in design studios
Extension of advergaming applications	• Extend the CAKE framework for the integration of actual purchase behaviour • Integrate sustainable consumption into the framework • Understand and incorporate concepts of cognitive dissonance in terms of sustainable consumer behaviour • Explore practices of "low-consumerism" employed within advergames and reduce consumer behaviour
Other cultures and markets	• Apply the CAKEQ with consumers from different countries: replicate the same experiment (Chapter 11) with LATAM countries, the UK, Americans and the French • Apply the CAKEQ with consumers from Eastern vs. Western countries with two different advergames (e.g. a Japanese advergame vs. a British advergame) • Apply the CAKEQ with Brazilians who are currently living in the UK, and British and Brazilians in Brazil in order to compare acculturation and cultural behaviour

14.4   Final remarks

This research aimed to integrate and to understand the influence of advergaming design in cross-cultural consumer behaviour, comparing Brazil and the UK. The studies carried out in this thesis were guided by the research conjecture, which proposed that *advergames influence and embed cross-cultural consumer behaviour.* The CAKE framework was constructed in order to integrate those perspectives, particularly through game design principles and elements, psychological attributes and behavioural aspects in a more holistic way.

The main finding of this research was that familiarity with visual aspects does indeed influence cross-cultural consumer behaviour, while comparing Brazil and the UK, which supports theories of cross-cultural HCI and cross-cultural advertising research. Curiously, this aspect occurred despite the game experience: both Brazilians and the British had the same game

experience. Brazil is a high-contextual culture, which means that implicit communication strategies function in this culture and this approach can be addressed in advergaming design.

The current research addresses this influence of context in advergaming design. As Brazil is a high-context culture and the British are not, their familiarity with visual aspects in the advergame shows that implicit content does work. In addition, familiarity is a form of mere exposure effect, which implies that people would prefer things that they are familiar with. This characteristic also shows that there is a consensus in terms of visual representations and this aspect could be used to provide effective advergame design across cultures. This suggests that a single change in the game could make all the difference.

Culture is pervasive and, therefore, it influences people's actions. National culture is one way to see culture but, because by definition culture is a shared construct, other types of culture might emerge. Different games for different tribes and different levels of segmentation could co-exist within the same nation. Thus, the present work expands the idea that people are immersed in a culture of games, showing that games are also pervasive and part of human lives.

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CatapultRPM, 2014, *Kellogg's Man of Steel*, mobile game, Kellogg's, U.S. Available at: https://itunes.apple.com/gb/app/kelloggs-man-of-steel/id633730505?mt=8

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Plump Digital, 2013, *Adidas Golf: Adizero Challenge*, mobile game, UK. Available at: https://itunes.apple.com/gb/app/adizero-challenge/id602103131?mt=8

The Coca-Cola Company, 2014, *Crabs & Penguins: Joy of Surfing*, mobile game, U.S. Available at: https://itunes.apple.com/gb/app/joy-of-surfing/id690033241?mt=8

The Coca-Cola Company, 2014, *Fanta Fruit Slam 2*, mobile game, U.S.

Ticker Tape Limited, 2014, Radiohead – Polyfauna, mobile game, Ticker Tape Limited, UK. Available at: https://itunes.apple.com/us/app/polyfauna/id793263070?mt=8

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Unilever Inc., 2013, *Cool Cubes*, mobile game. Available at: https://itunes.apple.com/gb/app/cool-cubes/id629986834?mt=8

Warner Bros. International Enterprises, 2013, *Gravity: Don't let go*, mobile game. Available at: https://itunes.apple.com/us/app/gravity-dont-let-go/id709579885?mt=8

Warner Bros. International Enterprises, 2014, *Inception: Mobile Architect*, mobile game. Available at: https://itunes.apple.com/gb/app/inception-the-app/id405235483?mt=8

* Gathered from iTunes store from each country page during October-November 2014. The country in the reference list is the publisher's country. Please note that due to the advertising campaign duration and other reasons some games might not be available anymore. Games referenced here that do not have a link were already unavailable by the time the researcher has written this Gameography.

Appendices

Appendix A   Previous studies in advergames

Stimuli	Platform	Product Category	Findings	Reference
Advergames	Website	Food	Content influence	Dias and Agante (2011)
Advergames	Website	Food	Advergames were created to promote brands / Interaction with food	Lee, Choi et al. (2009)
Advergames	Website	Food	Self-regulation, content	Dahl et al. (2009)
Advergames - racing	Website	Food	Flow	Hernandez, (2011)
Online games with negative association (fighting, action, violence) – combat games (placement)	Website	Various, car and LEGO	Content operates differently for explicit/implicit attitudes and familiar/unfamiliar brands	Waiguny, Nelson and Marko (2013)
Three online games: adventure, mini-golf, puzzle	Website	Car (adventure) and food	Previous knowledge of the brand, recall	Winkler and Bucker (2008)
Two online games: advergame and a game with banner advertising	Website	Food (M&Ms)	Recall of the advergames was higher than the recall of the banner	Deal (2005)
Artic 3D Racer (Nabisco) and Mini MiniGolf (Nabisco)	Website	Food (Nabisco)	Hispanics had a positive attitude toward the advergame; Intrusiveness was the most negative factor within attitude toward the advergame	Hernandez, Chapa, Minor et al. (2010)
Two Oreo advergames	Website	Food	Advergames with high game-product congruity led to explicit memory but had negative responses. High congruity led to brand associations and prior-game experience did not influence brand memory	Gross (2010)
Online advergame, video of advertising (Study 1) and online advergame without advertising (Study 2)	Website	Scooter (transport) (Study 1) and Beer (Study 2)	High telepresence had stronger affective responses and cognitive answers and purchase intentions	Sukoco and Wu (2011)

Car racing videogame (IGA)	Videogame	Perceived categories	Virtual attribute experience influences brand attitudes, transfer association and purchase intention	Besharat et al. (2013)

Appendix B   Game design dimensions

Game Design Dimensions	Malone 1982	Gee 2004	Qin, Rau and Salvendy 2009	Desurvire et al. 2009	Pinelle, Street and Hall 2008	Law et al. 2011
MECHANICS						
Balance		x		x		
Challenge	x	x	x			
Difficulty		x	x	x		
Feedback	x	x		x	x	X
Goals	x	x		x		
Levels and mastering	x	x				
Rules		x				X
Co-design		x				
Well-ordered problems/Predictability		x			x	
INTERFACE						
Control		x	x	x	x	X
Consistency	x	x		x	x	
Cues for information		x		x	x	X
Curiosity	x		x			
Customisation		x	x	x	x	X
Game Status				x	x	X
Exploration		x				
Fantasy	x			x	x	
Mapping					x	
Training and help					x	
Humour	x			x		
Identity		x				
Manipulation		x		x		

Metaphors	x			x		
Novelty and surprise	x			x		
STORY						
Concentration			x	x		
Comprehension			x	x		
Rules			x			
Identity				x		
Well-ordered problems Predictability				x		
Empathy	x		x	x		
Curiosity influenced by the storyline			x	x		
Control of the narrative		x		x		

Appendix C Coding sheet

Aspects of the Game	How the element is presented in the game
Game Structure	
Goals, points and rewards	Collect points Unlock content Both
Genre	Car racing Sports Adventure Simulation Shooter Puzzle Arcade
Interface	
Customisation	Player can customise the Language Choose difficulty Both
Manipulation	Player can Skip content Choose character or team Choose level All
Surprise, curiosity and novelty	The content is presented partially (Yes/No)
Telepresence	The game provides high level of interactivity The game explores the constraints of the device
Context	
Spatial	The game provides ways to build real-time actions, in different locations (Yes/No)
Temporal	The game provides ways to integrate with real-world elements (Yes/No)
Social	The game provides ways to promote social play as people can be considered as game elements (Yes/No)
Aspects of the Brand	
Congruity/Integration and/or Brand Fit	Associative and/or Label Illustrative and/or Entity Demonstrative Mixed: Associative and Illustrative Mixed: Associative and Demonstrative Playstoric Symbolic Emotional
Brand category	Airlines

	Apparel
	Car
	Celebrities
	Food
	Government Campaign
	Movies
	Music
	Sport
	Tourism
	Toys
	TV Show
Aspects of the Message	
Purpose	**Awareness of brand, TV show, product**
	Sustainability, well-being
	Tradition
	Entertainment, fun
	Safety
Story	**Extension**
	Brand-related
	Non-brand-related
	No particular story
Aspects of Localisation	
Content	**Translated**
	Specific
Language	**English or Portuguese**

Appendix D   Participant information*

Participant acronym	Age, y	Gender	Country
001-ENG-27-F	27	Female	UK
002-ENG-28-M	28	Male	UK
003-ENG-30-M	30	Male	UK
004-ENG-25-M	25	Male	UK
005-ENG-27-M	27	Male	UK
006-ENG-25-M	25	Male	UK
007-ENG-34-M	34	Male	UK
008-ENG-25-F	25	Female	UK
009-ENG-24-M	24	Male	UK
010-ENG-24-M	24	Male	UK
001-BRA-18-M	18	Male	Brazil
002-BRA-34-F	34	Female	Brazil
003-BRA-21-M	21	Male	Brazil
004-BRA-30-M	30	Male	Brazil
005-BRA-34-F	34	Female	Brazil
006-BRA-30-F	30	Female	Brazil
007-BRA-25-M	25	Male	Brazil
008-BRA-21-M	21	Male	Brazil
009-BRA-26-F	26	Female	Brazil
010-BRA-29-F	29	Female	Brazil
011-BRA-18-M	18	Male	Brazil
012-BRA-34-M	34	Male	Brazil

Average	26	7 Female	10 UK
		15 Male	12 Brazil

* The interviews were conducted between October-November 2014.

Appendix E   Results from the content analysis

Advergame features	How the element is presented in the game	Total BR (N=20)	Total UK (N=20)
Game Structure			
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%
Interface			
Customisation	Choose difficulty	15%	25%
	No customisation	**85%**	**75%**
Manipulation	Player can Skip content	15%	15%
	Choose character or team	25%	15%
	Choose level	20%	10%
	All	25%	**35%**
	No manipulation	**15%**	0%
Surprise, curiosity and novelty	Order of elements in the game	80%	80%
Telepresence	Media richness	90%	90%
Context			
Spatial	Integration with space	0%	5%
Temporal	Integration with time	5%	15%
Social	Presence of social media	**60%**	20%
Aspects of the Brand			
Congruity/Integration and/or Brand Fit	Associative/Label	5%	15%
	Illustrative/Entity	0%	0%
	Demonstrative	10%	0%
	Associative and Illustrative	5%	**40%**
	Associative and Demonstrative	5%	15%
	Playstoric	**50%**	25%
	Symbolic	15%	5%
	Emotional	0%	0%
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	0%	5%
	Entertainment	80%	**45%**
	Safety	0%	5%
Story	Brand-related	**60%**	45%
	Non-brand related	15%	**40%**
	No story	25%	**45%**
Aspects of Localisation			
Content/Language	Translated	**80%**	5%
	Specific	20%	**95%**

Appendix F   CAKEQ

Title: Cross-cultural advergaming design

Consent Form for Research Participants (ERGO ID 18286)

I am Vanissa Wanick, a PhD student from the University of Southampton, UK. I am requesting your participation in a study regarding advergaming design and cross-cultural consumer behaviour. The study should last approximately 10-20 minutes. You will be asked to fill out a short questionnaire composed of 35 questions, before and after playing a game. Personal information will not be released or viewed by anyone other than researchers involved in this project. A debriefing statement will be given to you upon completion of the study.

Any information you give will be kept completely confidential and in no cases will responses from individual participants be identified. As with any piece of research it is important to consider whether there are any risks to participants. The study involves minimal risk to participants (i.e. the level of risk encountered in daily life). There may be no direct benefit to you other than the sense of helping the public at large and contributing to knowledge.

All responses are treated as confidential, and in no case will responses from individual participants be identified. Rather, all data will be pooled and published in aggregate form only. Participants should be aware, however, that the experiment is not being run from a 'secure' https server of the kind typically used to handle credit card transactions, so there is a small possibility that responses could be viewed by unauthorised third parties (e.g. computer hackers). However, the data would appear only as a string of numbers, so your responses will remain totally anonymous.

Visitors to this website are welcome to complete the study, although they will receive no credit or monetary compensation. Participation is voluntary, refusal to take part in the study involves no penalty or loss of benefits to which participants are otherwise entitled, and participants may withdraw from the study at any time without penalty or loss of benefits to which they are otherwise entitled.

If participants have further questions about this study, they may contact the principal investigator, Vanissa Wanick at v.w.vieira@soton.ac.uk.

If participants have further questions about their rights or if they wish to lodge a complaint or concern, they may contact Head of Research Governance, Research Governance Office, University of Southampton, Southampton, SO17 1BJ. (Phone: 02380 595058, Email: rgoinfo@soton.ac.uk)

☐   Please tick (check) this box to indicate that you consent to taking part in this survey.

Section 1: Questions about you

Before playing the game, we just need to know a little bit about you! (no personal data will be shared!)

1-   What age are you?

☐   18-25

☐   26-35

☐   36-40

☐   over 40

2-   What is your Gender?

☐   Female

☐ Male

☐ Other

3- Level of Education?

☐ High School

☐ Undergraduate

☐ Master's Degree

☐ PhD

4- Which country are you from? _____

5- State/County? _____

6- How often do you play games? (1=never, 7=daily)

	1	2	3	4	5	6	7	
Never								Daily

7- Are you colour blind?

☐ Yes

☐ No

☐ I don't know

8- My attitude towards the *Fairtrade* mark is:

	1	2	3	4	5	6	7	
Bad								Good

	1	2	3	4	5	6	7	
Unfavourable								Favourable

	1	2	3	4	5	6	7	
Negative								Positive

Section 2: Thank you very much! Now you can play the game! :)

To continue with this research, please click in the link below to play the game!

http://do-doc-ahedron.co.uk/research/uk/onossocafezinho/story.html

How to play: click on the red beans and click on the buttons on the left to get more points! :)

Be careful with the time!

Please use Google Chrome 43+ versions, Firefox 41+ versions or Safari 9+ versions to open the link!

Don't forget to turn on the sound of your computer!

Check if your browser supports the WebGL: http://caniuse.com/#feat=webgl or http://www.doesmybrowsersupportwebgl.com/ just in case you have problems or write to the researcher.

Don't worry this is a safe link :) Don't forget to come back to the survey!

PLEASE DON'T PLAY ON YOUR MOBILE PHONE!

Section 3: Now that you've played the game, please answer the following questions.

9- I enjoyed playing the game

	1	2	3	4	5	6	7	
Strongly Disagree								Strongly Agree

10- I liked the game

	1	2	3	4	5	6	7	
Strongly Disagree								Strongly Agree

11- I would play this game again

	1	2	3	4	5	6	7	
Strongly Disagree								Strongly Agree

12- The graphics were appropriate for the type of game

	1	2	3	4	5	6	7	
Strongly Disagree								Strongly Agree

13- I did not like the music in the game

	1	2	3	4	5	6	7	
Strongly Disagree								Strongly Agree

14- The graphics of the game supported the scenario

	1	2	3	4	5	6	7	
Strongly Disagree								Strongly Agree

15- The graphics and sound effects of the game supported each other

	1	2	3	4	5	6	7	
Strongly Disagree								Strongly Agree

16- The sound of the game affected the way I was playing

	1	2	3	4	5	6	7	
Strongly Disagree								Strongly Agree

17- The game was unfair

	1	2	3	4	5	6	7	
Strongly Disagree								Strongly Agree

18- I understood the rules of the game

	1	2	3	4	5	6	7	
Strongly Disagree								Strongly Agree

19- The game was challenging

	1	2	3	4	5	6	7	
Strongly Disagree								Strongly Agree

20- The game was difficult

	1	2	3	4	5	6	7	
Strongly Disagree								Strongly Agree

21- The game scenario was interesting

	1	2	3	4	5	6	7	
Strongly Disagree								Strongly Agree

22- I did not like the scenario of the game

	1	2	3	4	5	6	7	
Strongly Disagree								Strongly Agree

23- I felt like sharing the game with my friends and family

	1	2	3	4	5	6	7	
Strongly Disagree								Strongly Agree

24- The game theme was familiar to me

	1	2	3	4	5	6	7	
Strongly Disagree								Strongly Agree

25- The game narrative provided me a sense of familiarity with the game theme

	1	2	3	4	5	6	7	
Strongly Disagree								Strongly Agree

26- I am familiar with the brand

	1	2	3	4	5	6	7	
Strongly Disagree								Strongly Agree

27- The game graphics (icons, symbols and objects) were familiar to me

	1	2	3	4	5	6	7	
Strongly Disagree								Strongly Agree

28- The game scenario provided me a sense of familiarity with the game's theme

	1	2	3	4	5	6	7	
Strongly Disagree								Strongly Agree

29- The game colour scheme provided me a sense of familiarity with the game's theme

	1	2	3	4	5	6	7	
Strongly Disagree								Strongly Agree

30- The music and the sound effects provided me a sense of familiarity with the game's theme

	1	2	3	4	5	6	7	
Strongly Disagree								Strongly Agree

31- The rules of the game were familiar to me

	1	2	3	4	5	6	7	
Strongly Disagree								Strongly Agree

32- How did you feel after playing the game?

	1	2	3	4	5	6	7	
Passive								Active

	1	2	3	4	5	6	7	
Mellow								Fired up

	1	2	3	4	5	6	7	
Low energy								High energy

33- My attitude towards *Fairtrade* is:

	1	2	3	4	5	6	7	
Bad								Good

	1	2	3	4	5	6	7	
Unfavourable								Favourable

	1	2	3	4	5	6	7	
Negative								Positive

34- I thought that the game was:

	1	2	3	4	5	6	7	
Not humorous								Humorous

	1	2	3	4	5	6	7	
Not funny								Funny

	1	2	3	4	5	6	7	
Not amusing								Amusing

35- Any other comments? _____

_____

If you want to stay in touch, please leave your email! Thank you! _____

Final section: Thank you very much for your participation!