

THE MYTH OF UNIFIED GLOBAL CULTURE: TRANSCODING NATIONAL CULTURES WITHIN WEBSITE INTERFACES

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Abstract

This paper probes two areas relating to transcoding culture in a website interface development context. Firstly, culture is interrogated through the lens of current anthropological models of dimensions (traits/tendencies) of national culture. Secondly, transcoding anthropological models of dimensions of national culture into culturally adaptive website interfaces through the graphic design process.

The world is rapidly moving toward purely digital visual communication rendered via computer code, the realm of computer programmers (coders). All too often ignorance of the graphic design process leads to technology centred website development rather than appropriate visual communication. Website development teams typically consist of coders, marketers and/or business people. A common denominator across website development teams is the notion of target audience or web Users. While the term "User" is commonplace in coding language, the ability to adjust visual communication within website interfaces, to maximise the User experience or to elicit a desired behaviour or action, remains a graphic design skill set.

Knowledge of the intended target audience is vital in graphic design terms because it informs decisions pertaining to visual communication. For websites with global Users, the target audience could be from any country. In the context of such a broad target audience website interfaces become generic as opposed to culturally adaptive.

Certain marketing literature from the eighties and nineties theorises that the Internet (communication technologies) would lead to a unified global culture, where Users from different cultural backgrounds and countries are homogenised into a single mass culture. This would simplify website interface design because there would be a single culture target audience. Anthropological and other country specific marketing literature does not support the notion of a unified global culture. Research shows that an individual's national culture remains a critical factor in international marketing contexts.

Cultures, specifically national cultures, offer graphic designers a means of segmenting global audiences into smaller groups with common cultural dimensions. These dimensions may, in theory, be transcoded by graphic designers from the anthropological to the visual in order to produce culturally adapted visual communication within website interfaces in order to maximise the User experience. There is currently only limited evidence of research in this field. This research does not focus on South African national culture, but on foreign national cultures in an effort to better understand cross-cultural web user-interface design.

Keywords: *Culture, dimensions of national culture, graphic design, culturally adaptive website interfaces*

Introduction

Marshall McLuhan is credited with coining the concept of the 'Global Village', in the context of electronic media, where person-to-person communication is possible regardless of geographic distance (de Mooij 2004, p. 1). In a marketing and consumer context, literature from the eighties and nineties theorises that the Internet (communication and media technologies) would lead to a unified global culture, where Internet Users from different cultural backgrounds and countries are homogenised into a single mass culture. The instantaneousness of media communication and the global ubiquity of certain television shows, products and brands appears to reinforce the notion of the global village and by extension the existence of the single mass consumer however, the reality is different (de Mooij 2004, pp. 2-3). The Internet is not leading to homogenisation, rather the demand is for the ability to adapt to meet the needs of local contexts (de Mooij 2004, p. 10). Analysts of organizational and business communication, such as Geert Hofstede, have developed cultural theories through which the impact of culture on different groups of consumers can be ascribed to differences in their national culture. The impact of these cultural theories/models on business and commerce have been addressed by other authors (Marcus & Gould 2000, p. 34). This paper interrogates the value of such cultural models within the visual design of website user interfaces as a means of adapting to the local user context. Emphasis will be placed on Hofstede's dimensions of national culture as basis for analyses.

The notion of "national culture" is widely acknowledged and books have been published on this subject. Hofstede and Hofstede make the following observation about national culture:

"The culture of a country – or other category of people – is not a combination of properties of the "average citizen" nor a "modal personality." It is among other things, a set of likely reactions of citizens with a common mental programming... ..such reactions need not be found within the same individuals, but only statistically more often in the same society." (Hofstede & Hofstede 2005, p. 162)

During the period 1978 – 1983, Geert Hofstede conducted detailed employee interviews research within the IBM company across 53 countries that revealed patterns he ascribed to national culture (Marcus & Gould 2000, p. 35) and which Hofstede termed "dimensions of national culture" (Hofstede & Hofstede 2005, pp. 22-3). Trompenaars and Woolliams present seven dimensions of culture aimed at giving marketers insight into cultures (2004, pp. 50-1) while Hofstede et al. identify five dimensions of national culture (5-Ds). Hofstede et al. point out that there are several other models for the classification of culture and national culture and that while these other cultural classification models may use different terminology, their research data is strongly correlated to aspects of the data obtained from the IBM research (Hofstede & Hofstede 2005, pp. 31-3), a view that is supported by de Mooij based on statistical values of Hofstede's data (2004, pp. 30-2). The implication being that even though many different classification models exist, several of these models correlate to Hofstede's dimensions and therefore offer similar insights into culture. These insights may simply be grouped or termed differently by other authors and theorists. While the issue of cultural classification and grouping may be open to debate, what is clear is that cultural differences based on nationality exist.

Marcus and Gould advise web "visualization designers" to "consider their own cultural orientation and to understand the preferred structures and processes of other cultures" (Marcus & Gould 2000, p. 34). Miletsky outlines a user-testing framework (2002, pp. 202-18) that can be used to evaluate a website which is based on both quantitative data and qualitative feedback and which provides a more complete picture of the user experience by testing the website on the specific audience (2002, p. 204) and then adjusting the design based on the audience feedback. There is general agreement amongst professional analysts and designers that well designed interfaces ultimately convert users to customers (Marcus & Gould 2000, p. 34) and therefore website user experience is important. Furthermore, the design of website user-interfaces is influenced by local cultural perspectives such as language and country (Ford & Kotzé 2005, p. 717) and therefore adaption of the design of a website interface, to suit a user from a particular culture, is important.

In website design, the term “internationalisation” refers to having a single website design that is used worldwide while “localisation” refers to designs that have been adapted to a specific locale (Nielsen 2000, p. 315). The practice of interface design that is cognisant of its users’ culture is referred to as localisation (Sun 2002 para. 1) and is achieved by adjusting the design of a website interface based on cultural factors. Barber & Badre present results of research that provide evidence of national localisation through the analyses of selected graphic elements and their prevalence within websites. These elements are termed “cultural markers” (Barber & Badre 1998, p. 2) and their research tabulates graphic elements (cultural markers) unique to particular nationalities and genres of websites – these include elements such as colour, spatial organisation, fonts, shapes and more (1998, pp. 2-3, 5-6) For the purposes of this research the term “culturally adaptive” will be used to describe visual communication within website user-interfaces that has been adapted to the cultural preferences of users in order improve the user experience.

The thesis of this research is to identify how it is possible to transcode cultural theory to visual communication (graphic design) by using Hofstede’s five dimensions model of national culture (5-D). To achieve this, firstly, Hofstede’s dimensions are introduced and secondly, literature that addresses transcoding and/or impact of cultural dimensions in website user-interfaces will be presented.

Models of culture

The problem with understanding another culture is that you are required to compare it to another culture, typically your own (de Mooij 1998, p. 64). This almost inevitably leads to bias and danger of stereotyping, but there is enough statistical evidence identifying patterns, trends and tendencies that can be attributed to a particular culture (Marcus & Gould 2000, p. 43). In order to organise cultural data metamodels of culture have been developed. Metamodels provide a broad view of philosophies and concepts of culture and one such metamodel is the Objective and Subjective Culture Model developed by Stuart Bennett described by Ford and Kotzé below:

“Objective culture is the ‘institutions and artefacts of a culture, such as its economic system, social customs, political structures and processes, arts, crafts and literature’ [2, p 43]. Objective culture is visible, easy to examine, tangible, as it is represented in text orientation, date and number formats, colour and language [7]. In contrast, subjective culture is ‘the psychological features of a culture, including assumptions, values and patterns of thinking’ [2, p 43]. Subjective culture is difficult to examine because it operates outside of conscious awareness, for example, in the way people accept or reject uncertainty [1], similarities and differences in power and authority [1, 8], and the amount of emotions that people express when dealing with others [9].” (Bennett, cited in Ford & Kotzé 2005, p. 714)

Bennett makes the observation that objective culture is in fact abstract because “it is an externalisation of subjective culture”, but that it is seen as being more real than subjective culture, which is its source (Bennett, cited in Ford & Kotzé 2005, p. 715).

From metamodels of culture different models of culture have been developed that provide more detail about a culture by grouping data into cultural dimensions (Ford & Kotzé 2005, p. 715). The cultural theories of Hall, Victor, Kluckhohn and Strodtbeck, Trompenaars as well as Hofstede are commonly cited in organisational, business or marketing papers and publications. Below is a table with data from Ford and Kotzé in which four models of culture described:

Table 1. Cultural models and their dimensions

Victor	Hall
Language Environment and Technology Social Organisation Contexting Authority Conception Nonverbal Behaviour Temporal Conception	Speed of Messages Context Space Time Information Flow Action Chains
Trompenaars	Hofstede
Universalism vs. Particularism Neutral or Emotional Individualism vs. Collectivism Specific vs. Diffuse Achievement vs. Ascription Time Environment	Power Distance Masculinity versus Femininity Individualism vs. Collectivism Uncertainty Avoidance Time Orientation

(Hoft, Victor, Hall, Trompenaars, Hofstede, cited in Ford & Kotzé 2005, p. 715)

In the literature, Hofstede’s model appears to be preferred as a basis for analyses and argument in cross-cultural communication (de Mooij 1998, 2004; Ford & Kotzé 2005; Hermeking 2005; Marcus & Gould 2000). Hofstede is also commonly cited in papers dealing with culture and web interface design and this may be attributed to the simplicity of his 5-D model as well as the statistical validity due to the size of the study that produced the data for the model and that his data has been independently tested for accuracy outside of the IBM environment (de Mooij 2004, p. 36; Hofstede & Hofstede 2005, p. 26). Furthermore there is country specific data available for 87 countries (Hofstede & Hofstede 2005, p. 27). This research focuses on Hofstede’s model of national culture based on these factors.

Understanding Hofstede’s model of national culture

Hofstede views culture as collective mental programming where each individual carries patterns of thinking, feeling and action, most of which has been acquired in childhood (Hofstede 1991, p. 4). He goes on to say that culture “is always a collective phenomenon” because it is shared in a social group and furthermore, that it is derived from the social environment which implies that culture is learned and not inherited (Hofstede 1991, p. 5). Figure 1 illustrates Hofstede’s view of mental programming.

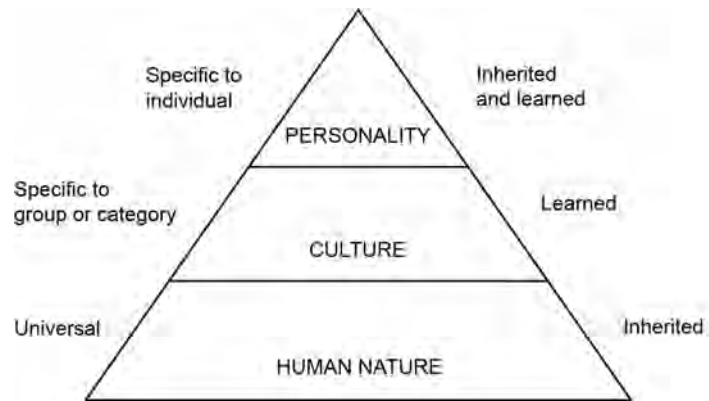


Figure 1. Three levels of uniqueness in human mental programming (Hofstede 1991, p. 6).

Hofstede maintains that cultural differences manifest in different ways, but that symbols, heroes, rituals and values can be used to describe manifestations of culture (Hofstede 1991, p. 7). Figure 2 below illustrates these four manifestations within culture and shows that ‘values’ are seen as a core manifestation.

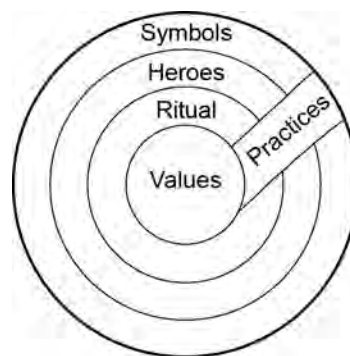


Figure 2. The ‘onion diagram’: manifestations of culture at different levels of depth (Hofstede 1991, p. 9).

Symbols are considered by Hofstede to be the most superficial manifestation of culture and are therefore placed in the outermost layer of the ‘onion’ in Figure 2. Their superficiality is attributed to the fact that symbols such as words, images or objects appear and disappear over time and are often copied by other cultures (Hofstede & Hofstede 2005, p. 6). Consumer brands such as Coca-Cola also fall into this category (Hofstede 1991, p. 7).

Heroes are people who are dead, alive or fictitious such as Superman in the United States or Nelson Mandela in South Africa, who serve as models for behaviour (Hofstede & Hofstede 2005, p. 7).

Rituals are collective activities that are deemed to be socially essential such as ways of greeting, use of language, social interactions and religion (Hofstede & Hofstede 2005, p. 8).

Practices subsumes the symbols, heroes and rituals categories because their cultural meaning is invisible to outsiders but visible to insiders (Hofstede & Hofstede 2005, p. 8).

Values form the core of culture and are learnt within the first twelve years and these represent “tendencies to prefer certain states of affairs over others” (Hofstede & Hofstede 2005, p. 8). Values are intangible emotions and feelings which are often unconscious and can only be inferred by the way people act under certain

conditions (Hofstede 1991, p. 8). Values are represented on opposites ends of a scale and determine how “good and bad” are defined (Trompenaars 1993, p. 23), for example:

Evil vs Good
Dirty vs Clean
Dangerous vs Safe
Forbidden vs Permitted
Irrational vs Rational
(Hofstede & Hofstede 2005, p. 8)

If values are at the core of culture as Hofstede postulates, then measurement of such values becomes an important factor in attempting to understand or compare particular cultures. Hofstede conducted his research using questionnaires which, by his own admission are not a perfect instrument of measurement because there is a distinction between “the desirable and the desired: how people think the world ought to be versus what people want for themselves.” (2005, p. 21). “Values and norms” are often used indiscriminately, but “norms are the mutual sense a group has of what is “right” and “wrong”.” (Trompenaars 1993, p. 22) or as Hofstede states they are absolute standards for behaviour which are ethically right (desirable) (Hofstede & Hofstede 2005, p. 21). Hofstede’s dimensions aid the understanding of basic value differences between national cultures (de Mooij 2004, p. 33).

Dimensions of national cultures

Hofstede acknowledges that using a passport is not a logical way research cultural differences because nations are not necessarily the same as societies and geographic boundaries do not always coincide with cultural dividing lines, but nationality makes data collection expedient (Hofstede & Hofstede 2005, pp. 18-9).

Hofstede’s dimensions are each scored on a statistical index of 0 – 100 where a 100 value indicates a strong tendency in that dimension. As seen in Table 1 Hofstede named his five dimensions:

1. Power Distance
2. Individualism vs. Collectivism
3. Masculinity versus Femininity
4. Uncertainty Avoidance
5. Long Term Orientation

Each dimension is briefly described below and then, in the following section, their application, based on the literature, is investigated in the context of website user interface design.

Power Distance (PD)

By Hofstede’s definition PD deals primarily with inequalities in a society and how that society views and deals with them (Hofstede & Hofstede 2005, p. 40). Differences in social status and wealth and attitude to authority are factors that make up this dimension and the dimension essentially expresses dependence relationships within society and in low scoring PD there is a consultative approach where there is low dependence by subordinates on bosses (authority) (2005, pp. 45-6). Hofstede contrasts the differences in PD values in the context of family, school workplace and state (2005, pp. 52-62). For example, in family, high power distance situations typically require children to be obedient, there is often a hierarchy of authority and respect is virtuous, by contrast, in low PD situations children are considered equals from a young age, experimentation is encouraged, children may contradict elders and parents aim to develop independence in their children (Hofstede & Hofstede 2005, pp. 51-2) In high scoring PD cultures social position is demonstrated and elders

are respected while in low PD cultures social status is played down and the elderly try to look younger (de Mooij 2004, p. 34).

Individuality versus Collectivism (IDV)

In individualistic cultures values are within each individual and they desire differentiation from each other while in collectivist cultures social networks define identity (de Mooij 2004, p. 34). In collectivist cultures family is extended outside of parents and siblings and children grow up in a “we” group which serves as the major source of their identity (Hofstede & Hofstede 2005, p. 75). Individualists, by contrast, look after themselves and immediate family only, they value personal time, material reward, personal opinion and honesty (Ford & Kotzé 2005, p. 716) and the purpose of educating a child is to ensure independence and children are expected leave home as soon as independence is achieved (Hofstede & Hofstede 2005, p. 75).

Masculinity versus Femininity (MAS)

Hofstede’s rationale for the name of this dimension is based on the fact that males and females scored consistently differently but the dimension relates to social roles, not gender, and emphasises emotion (2005, pp. 119-20). Hofstede points out that biology plays a small part in how gender roles are differentiated because boys and girls learn their role in society through socialisation (2005, p. 128), where for example in masculine cultures, girls cry and boys do not and boys should fight back and girls should not fight at all whereas in feminine cultures (low MAS) boys and girls can cry and neither should fight (2005, p. 132). De Mooij suggests an alternative description for the dimension, namely “Tough vs Tender” (2004, p. 34). In feminine cultures males can occupy female jobs without emasculation (de Mooij 2004, p. 35). In cultures with high MAS scores males should be assertive, competitive and tough and strive for recognition and higher financial reward while females should focus on home and be concerned with quality of life (Ford & Kotzé 2005, p. 716). Hofstede defines a feminine culture as a society where “emotional gender roles overlap: both men and women are supposed to be modest, tender and concerned with quality of life” (2005, p. 120).

Uncertainty Avoidance (UA)

This dimension deals with the way in which a culture deals with ambiguity or uncertainty and it is, in essence, a subjective feeling which in some cultures is shared amongst other members (Hofstede & Hofstede 2005, pp. 163-4). Hofstede states that UA and risk avoidance are not the same thing because risk is generally attributed to a specific event and its probability is often measured in percentage terms whereas uncertainty is a diffuse feeling with no numeric value (2005, p. 172). He goes on to state that uncertainty avoidance has the effect of reducing ambiguity and that high scoring UA cultures look for structure in their institutions and relationships and paradoxically they may take risks in order to reduce ambiguity (2005, p. 172).

Long Term Orientation (LTO)

The LTO dimension incorporates Confucian principles and accordingly Asian cultures have high LTO scores and Western cultures score low (de Mooij 2004, pp. 35-6). LTO is orientated toward virtues that yield future rewards such as perseverance and thrift and conversely, short-term orientation fosters virtues relating to past and present such as respect for tradition, “face” and social obligation (Hofstede & Hofstede 2005, p. 210). In short-term orientated cultures members are concerned with past and present and believe in equality of relationships and they emphasise individualism whereas high LTO cultures are concerned with the future, believe that unequal relations lead to a stable society, males hold more authority than females and education and hard work are valued (Ford & Kotzé 2005, p. 716).

Transcoding culture in website user-interface design

Transcoding is defined in dictionaries as the conversion of (language or information) from one form of coded presentation to another. In the context of this research there are three possible coded presentations. Firstly, culture which is coded and presented here in dimensions of culture. Secondly, the design of the website user-interface (UI) which is presented as visual communication in the form of typography, images, graphics, colour and more. Thirdly, computer code such as HTML, PHP and CSS which are required in order to display the visual communication within website UIs. The scope of this research is limited to issues informing the transcoding of models of culture, in this case Hofstede's dimensions, to visual communication presentations in the context of website UIs.

The literature reveals surprisingly limited research on the relationship between culture and visual communication and design within website UIs and no texts authored by graphic designers could be identified. However, there is a substantial body of research on the role/impact of culture within human-computer interaction in general, including website UIs.

Barber and Badre coined the term "Culturability" based on research that identified culturally specific elements in websites, referred to as "cultural markers", which they believe impact user performance and usability (1998 para. 1,7). The culturability research is not based on cultural models, but is enlightening in the visual communication context because it documents the prevalence of graphic symbols/metaphors, colours, fonts, alignment, grouping, asymmetry and more, based on nationality of websites (Barber & Badre 1998). Marcus and Gould (2000) published guidelines, derived from Hofstede's cultural dimensions, for application in the design of website UIs. The guidelines provide no specific information regarding symbols, colours, navigation, images etc., but they do provide a possible framework for transcoding Hofstede's 5-Ds into UIs. The application of the guidelines, by designers, is intended to result in culturally adaptive website UI design that improves the website user experience.

Tables 2.1 – 2.5 tabulate the guidelines proposed by Marcus and Gould (2000) in addition, relevant elements and principles of visual communication and design are proposed by this researcher which may be applied within the process of transcoding the 5-D model to visual design presentations. The list of elements and principles is not intended to be exhaustive, nor have they been tested and they serve only to illustrate how the theoretical guidelines might actually be applied in the visual design process.

Table 2.1. Marcus and Gould's guidelines for the dimension Power Distance and their possible relevance within website user-interface design.

Dimension: Power Distance (PD)	
*Guideline (High to Low)	Relevant elements and principles of design
Access to information: Highly structured vs Less structured	<i>Site navigation, grid/layout, colour palette (multi-monotone), use of 'white' space, font selection</i>
Symbols of social/moral order: Significant/frequent vs minor/infrequent use	<i>Symbols such as flags or religious symbols, colour palette</i>
Focus on experts, authority, certificates, official stamps: Strong vs weak	<i>Image selection, graphics/symbols that convey importance, information emphasis, visual hierarchy and sequence of content in layouts</i>
Prominence given to: Leaders vs citizens, employees or customers	<i>Image selection, visual hierarchy and sequence of content</i>
Importance of security/restrictions or barriers to access:	

Explicit/enforced vs transparent, integrated, freedom to roam	<i>Site navigation, grid/layout, colour to define areas, visual prominence of login, hierarchy and sequence of content in layouts</i>
Explicitness of social roles: Manager vs non-manager	<i>Image selection, site navigation, grid/layout, colour to define areas, visual prominence of restricted area, hierarchy and sequence of content in layouts</i>

*(2000, p. 36)

Table 2.2. Marcus and Gould's guidelines for the dimension Individualism versus Collectivism and their possible relevance within website user-interface design.

Dimension: Individualism vs Collectivism (IDV)	
*Guideline (High to Low)	Relevant elements and principles of design
Motivation based on personal achievement: Maximised vs underplayed	<i>Image selection (e.g. individual success or group achievement), visual hierarchy and sequence of content in layouts</i>
Images of success: Materialism/consumerism vs achievement of socio-political agendas	<i>Image selection (e.g. individual success or social achievement)</i>
Rhetorical style: Argumentative/extreme claims vs official slogans, subdued hyperbole and controversy	<i>Headlines and copy, colour palette, image selection</i>
Prominence given to: Youth and action vs aged, experience, wisdom	<i>Images selection (people), font selection, layout/grid, colour palette, overall style and tone</i>
Importance given to: Individuals vs individual products or products with groups	<i>Image selection, hierarchy, visual grouping (gestalt principles)</i>
Underlying sense of social morality: Emphasis on truth vs relationships	<i>Image selection, hierarchy, visual grouping (gestalt principles), symbols of morality (e.g. religion)</i>
Personal information: Willingness to provide personal information vs protection of data differentiating individual from group	<i>Structure of forms for data collection</i>

*(2000, pp. 37-8)

Table 2.3. Marcus and Gould's guidelines for the dimension Masculinity versus Femininity and their possible relevance within website user-interface design.

Dimension: Masculinity vs Femininity (MAS)	
*Guideline (Masculinity)	Relevant elements and principles of design
Traditional distinctions: Gender/family/age	<i>Image selection, visual hierarchy and sequence of content in layouts</i>
Focus on:	

Work tasks, roles and mastery, quick results for limited tasks	<i>Navigation, visual hierarchy and sequence of content in layouts</i>
Navigation: Oriented to exploration and control	<i>Navigation, information design, visual hierarchy and sequence of content in layouts</i>
Attention: Gained through games/competitions	<i>Layout - prominence given to competition/games</i>
Graphics, sound, animation: For utilitarian purposes	<i>Information design, colour palette, symbols, animations</i>
Underlying sense of social morality: Emphasis on truth vs relationships	<i>Image selection, hierarchy, visual grouping (gestalt principles), symbols of morality (e.g. religion)</i>
Personal information: Willingness to provide personal information vs protection of data differentiating individual from group	<i>Structure of forms for data collection, a mechanism to convey importance or information emphasis</i>
*Guideline (Femininity)	Relevant elements and principles of design
Gender roles: Blurring of roles	<i>Image selection</i>
Cooperation: Mutual cooperation, exchange and support	<i>Site structure incorporates forums, blogs social platforms/tools, image selection, layout</i>
Attention: Poetry, visual aesthetics and appeals to unify values	<i>Style and tone of visuals and content, visual emphasis of appeals</i>

*(Marcus & Gould 2000, p. 39)

Table 2.4. Marcus and Gould's guidelines for the dimension Uncertainty Avoidance and their possible relevance within website user-interface design.

Dimension: Uncertainty Avoidance (UA)	
*Guideline (High UA)	Relevant elements and principles of design
Simplicity: Clear metaphors, restricted volumes of data	<i>Image selection, site navigation, grid/layout, colour palette (multi- monotone), use of 'white' space, font selection, limit data presentation</i>
Information: Reveal/forecast results implications of actions before users act	<i>Unambiguous navigation, visual hierarchy and sequence of content in layouts</i>
Navigation: Prevent users from becoming lost	<i>Unambiguous navigation, information design, colour palette, visual hierarchy and sequence of content in layouts, inclusion of navigational aids e.g. breadcrumbs</i>
Mental models: Help systems that reduce user errors	<i>Prominence given to help menus/content, navigation, information design, colour palette, visual hierarchy</i>

	<i>and sequence of content in layouts</i>
Redundant cues: Colour, typography, sound to reduce ambiguity	<i>Navigation, information design, colour palette, type selection, headlines and copy, symbols e.g. microphone or speaker</i>
*Guideline (Low UA)	Relevant elements and principles of design
Complexity: Maximal content and choice	<i>Image selection, site navigation with sub menus, multi-grid system, colour palette, font selection, visual hierarchy and sequence of content in layouts</i>
Risk: Encourage wandering and risk, stigmatise over protection	<i>Site structure incorporates forums, blogs social platforms/tools, image selection, layout</i>
Navigation: Less control over navigation	<i>Navigation more ambiguous</i>
Mental models: Mental models and help systems focussed on understanding concepts rather than narrow tasks	<i>Content of help systems and general site content</i>
Non-redundant cues: Colour, typography and sound used to maximise information, multiple links with no redundancy	<i>Discard redundant content or navigation, image selection, site navigation with sub menus, in-text links, multi-grid system, colour palette</i>

*(2000, p. 41)

Table 2.5. Marcus and Gould's guidelines for the dimension Long Term Orientation and their possible relevance within website user-interface design.

Dimension: Long Term Orientation (LTO)	
*Guideline (High LTO)	Relevance to visual communication and design
Content focus on: Practical value and practice	<i>Image selection, information design, grid/layout, headlines and copy</i>
Relationships: As source of information and credibility	<i>Image selection, use of symbols, contact information</i>
Patience: Patience in achieving results and goals	<i>Sequence of content in layouts</i>
*Guideline (Low LTO (Short Term))	Relevance to visual communication and design
Content focus on: Truth and certainty of beliefs	<i>Image selection, use of symbols (belief), style and tone of content</i>
Rules: Rules as source of information and credibility	<i>Emphasis of content containing rules, information value of rules in content, hierarchy of content types</i>

Immediacy:

Desire for immediate results and achievement of goals

Sequence of content in layouts, site navigation, grid/layout

*(2000, p. 43)

From the tables above it would appear that Hofstede's model of national culture may be transcoded to visual design presentations within website UI design contexts. Ford and Kotzé (2005) have empirically tested aspects of Hofstede's dimensions, based on the guidelines of Marcus and Gould, within website UIs with mixed results that require further research. However, they refer to data from a previous study that shows that the application of dimensions appears to have a positive effect on users regardless of their culture profile (Ford & Kotzé 2005, p. 724).

Conclusion

This research has interrogated culture through the lens of Hofstede's model of national culture in order to ascertain its value to the design of culturally adaptive website user-interfaces. The literature reveals that Hofstede's model is used within culturally adaptive user-interface development in the field of human-computer interaction. Guidelines that attempt to interpret Hofstede's 5-D model in a website user-interface context exist and have been tested empirically in part. It would appear, based on the literature, that it may be possible to develop a model, made up of elements and principles of visual communication and design, that could aid designers in transcoding models of culture into visual presentations. However, further research is required to develop such a model and to validate its application within cross-cultural visual communication.

This research exposes the fact that there is limited literature addressing the application of Hofstede's model within a visual communication and design context. Furthermore, it would appear, from the literature, that no graphic designers are involved in research that interrogates cross-cultural communication in a website user-interface context. In an increasingly global village that is rapidly moving from printed communication to screen-based communication, it is imperative that graphic designers engage with the implications of cross-cultural visual communication and design if they hope to remain relevant within the website and digital communication landscape.

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