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GLOBALIZATION OR LOCALIZATION?

A longitudinal study of successful American and Chinese online store websites

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Abstract. This paper reports the results of a longitudinal study of 2562 images on the homepages of successful American and Chinese online store websites,with the goal of determining whether cultural factors impact their visual presentation and evolution. Descriptive and statistical content analyses reveal that the U.S. and Chinese online store sites showed significant cross-national image differences from their inception; moreover, the Chinese sites diverged further from the U.S. sites over time, strengthening their own cultural identity and suggesting a trend towards localization in a diverse and dynamic world market. These findings support the view that although English-speaking Western culture is widespread in today's Information Age, other cultures are not necessarily undermined.

1. Introduction

Shopping, a traditional human activity embedded in larger processes of information sending, receiving, exchanging, interpreting, and decision making, has evolved with the development of information technology. In today's digital era, online shopping has become increasingly popular. Moreover, with the rapid growth of e-commerce, companies are increasingly targeting foreign online consumers. However, since the arena that hosts online store websites—the World Wide Web—was created and is based primarily in the U.S. and Europe and "tends to exemplify the values and norms of these advanced industrial countries" (Simon, 2001, p. 19), tensions emerge "between Internet-led globalization and an increased need for local culture and language" (Dor, 2004, p. 101) in e-commerce environments.

Studies of this issue can help companies optimize their marketing strategies and extend their e-business globally—by launching standardized websites (i.e., universally appealing global sites) and/or localized versions (i.e., culturally and consumer specific sites). Specifically, research can shed light on the possible impact of web format and content on information use online by measuring the use of graphics, design elements, colors, and organization of information (e.g., Callahan, 2005; Zhang et al., 2001).

This paper reports the results of a longitudinal study of 2562 images on the homepages of successful online store websites in two cultures, China and the U.S., focusing on the differences and similarities in their approaches to presenting

information visually, in order to investigate empirically to what extent differences between the cultures exist and whether trends over time are in the direction of localization or globalization. The study builds on a theoretical foundation that incorporates concepts of store atmospherics (East, 1997; Engel et al., 1990; Koufaris et al., 2002) and cultural distance (Zhao et al., 2003).

One way to test the possible tendencies towards globalization or localization is to compare the design and content characteristics of websites in countries that are distant in cultural terms. According to Hofestede and Bond's (1984) dimensions of culture, Chinese culture tends to be masculine and mainly collectivistic, while American culture tends to be less masculine and mainly individualistic(see also Hsu, 1981). Thus, five successful American and five Chinese online store websites, which belong to the genre of web-only retail and auction B2C websites that sell all kinds of products, were selected as data sources. The Wayback Machine (http://archive.org) was used to collect five snapshots of the homepages of each website in different periods: the earliest record (between 1998 and 2003, depending on the website), 2004, 2006, 2008, and 2011. Visual content analysis (Bell, 2001) was conducted to analyze all 2562 images on the homepages of the sample sites.

The analysis reveals two main results: 1) The U.S. and Chinese online store sites show overall cross-national image differences, and 2) the evolution of the Chinese websites tends to be in the direction of localization rather than globalization. This trend does not apply to the U.S. sites because they, as the founders of the online store web genre, were already "localized" to start with. We interpret these results as evidence that the dominant role of English-speaking Western culture in today's Information Age does not necessarily lead to a homogeneous world or undermine other cultures. Rather, the results suggest that other cultures may borrow/learn from American culture yet still strengthen their own identities.

2. Literature Review

Researchers (e.g., Dor, 2004; Gary, 2000) have investigated issues of globalization and localization in terms of language, culture, and business. Dor (2004) proposes that "native linguistic identity plays a crucial role in consumers' decision-making processes" (p. 102), thus the process of Englishization can be regarded as the process of economic globalization, and local language as "local resistance to economic (and cultural) globalization" (p. 97). He discusses the tension between economic globalization based on the Internet and the increased need for local culture and language, concluding that the Internet is becoming increasingly multilingual "because the agents of economic globalization have realized that adapting to local cultures and languages is a necessary component of staying competitive" (p. 115). Empirical research has lent support to Dor's claim. For example, Callahan and Herring (2012) report that even in the domain of higher education, which is dominated globally by English, websites are becoming increasingly multilingual.

Business researchers investigating the global/local issue have found that the rapid development of Internet technologies encourages companies to expand globally across different cultures, political systems, and economies (Zhao & Levary, 2002). This triggers a debate as to whether to adopt a standardized approach to web communication (a transnational web style) or a localized-specialized approach, i.e., by launching

foreign-language websites (Singh et al., 2004). In general, this debate endeavors to answer two questions: Can a single website serve a global marketplace? Or should a company set up a separate site in each country where it has a significant presence (Gary, 2000)? Luna et al. (2002) propose that culturally congruent web content decreases the cognitive effort required to process information on a site, leading to easier navigation and more favorable attitudes toward the website. Some studies provide evidence of cross-cultural differences in the design of and response to websites and support the use of localized (i.e. country-specific) sites (e.g., Gary, 2000; Luna et al., 2002; Simon, 2001; Singh et al., 2004). In contrast, some other studies (e.g., Yang & Kang, 2002) indicate that the role and impact of culture on designing and perceiving a website is not significant, and they propose a standardized approach to web communications.

The above studies focus on language use; other studies have analyzed graphical aspects of localization. For example, Cutler et al. (1992) reported significant differences between European countries and the U.S. in the visual components of magazine advertisements. Callahan (2005) examined cultural differences and similarities in the design of university websites from eight countries and found differences that corresponded to Hofstede's (1991) cultural dimensions. Schmid-Isler (2000) studied news sites and reported differences in site organization between the home pages of Chinese and Western news sites.

Some researchers focus in particular on the cultural differences between U.S. and Chinese business websites. There are two reasons for this special emphasis: First, the U.S. and China differ greatly in terms of cultural background, which potentially impacts the layout of their websites. According to Hsu (1981), the American way of life is "individual-centered" and is a variant of Western individualism, characterized by a greater emphasis on "self-reliance," equality, resentment of class-based distinctions, and rejection of the past, while the Chinese way of life is centered on a set of relationships defined by Confucian doctrine, including women's chastity, fidelity, and virtue, benevolent fathers and filial sons, submission to authority, and ancestor worship. Second, both the U.S. and China are giant economic entities and boast a dynamic and prosperous e-commerce market. comScore reports $37.5 billion in the second quarter of 2011 for U.S. retail e-commerce spending, up 14% compared to one year ago. The IResearch Consulting Group (2011) reports that China's business-to-business trade revenue rose to RMB 2.9 billion ($444 million) in the first quarter of 2011, 7.7% more than the previous quarter's 2.7 billion and up 40.9% from one year earlier.

Previous studies have shown that visual differences indeed exist between U.S. and Chinese websites; however, some results are contradictory. For example, in a study of web-based business sites by Simon (1999), Asians overwhelmingly suggested the use of less bold colors, while Westerners preferred bright colors with more images to make the site appear more modern. In contrast, Singh et al. (2003) compared cultural adaptations on American companies' domestic and Chinese websites and found that Chinese websites used more bold colors and animation, traditional themes, and cultural symbols, and exhibited a higher contextuality and oneness with nature. However, the U.S. websites tended to use more realistic themes, less fantasy and imagery, as well as more superlatives. Similarly, Zhao et al. (2003) analyzed the 100 most popular websites in 2000 (50 Chinese and 50 American) and reported differences in design and content characteristics: The presence of a search engine, site map, and help function show no

statistical difference between American and Chinese websites, but the Chinese sites used more animated content and floating banners.

Based on these findings and debates, culture as a variable in designing online environments is becoming increasingly important, especially for online store websites, which incorporate traditional business activities conducted in embedded cultural backgrounds and modern Internet technologies. However, designing an online store website and doing online business is very different from running or visiting a conventional physical store. One major difference is closely associated with "store atmospherics" (Engel et al., 1990), which refers to the physical layout and designing of a store—colors, background music, shelves, exhibition of goods, and so on. According to East (1997), store atmospherics have a direct effect on customer mood and behavior. However, the atmospherics of online store websites exclusively depend on "a computer monitor that usually displays only two-dimensional pictures and text" (Koufaris et al., 2002, p. 120). Therefore, visual presentation of information on the web becomes crucial (Singh et al., 2004). That is, images function as the main way to present information, to meet users' expectations and predictions in a web-based environment, and to represent the visual and emotional appeal of the online store's atmospherics.

3. Methodology

3.1. SAMPLING AND DATA SOURCES

Judgment sampling was used in order to select websites for analysis that are successful and hence, presumably, influential. The judgment criteria employed were:

1) *Location:* Headquarters in the U.S or China
2) *Rank:* numbers of unique visitors and market shares
3) *Genre:* Web-only, which means exclusively online—no offline counterparts or physical stores available
4) *Products*: selling all kinds of products
5) *History*: should have records retrievable via the Wayback Machine: http://archive.org; this is essential to conduct the longitudinal study.

Five U.S. websites and five Chinese websites that met these criteria were selected as the data sources, coded as U1 to U5 and C1 to C5, respectively. Table 1 lists the sample websites and their URLs.

Table 1. Sample websites with URLs and logos

Country	ID	Link	Country	ID	Link
U.S.	U1	www.amazon.com	China	C1	www.taobao.com
	U2	www.overstock.com		C2	www.dangdang.com
	U3	www.qvc.com		C3	www.360buy.com
	U4	www.gooddeals.com		C4	www.paipai.com
	U5	shopping.yahoo.com		C5	Shop.qq.com

The Wayback Machine (http://archive.org) was used to retrieve five snapshots of the homepages of each website in different periods: the earliest record (between 1998 and

2003, depending on the website), 2004, 2006, 2008, and 2011. Each snapshot was coded as U1a, U1b, C3c, C5d, and so forth.

3.2. RESEARCH QUESTIONS AND HYPOTHESES

For the website sample, the following research questions were posed:

RQ1: How, if at all, do the U.S. and Chinese online store sites show image differences?
RQ2: If they do, what are the longitudinal trends in the evolution of such differences?
RQ3: Is there evidence that culture impacts the differences, and if so, how?

The expectations for the outcomes of the analysis were articulated as the following hypotheses:

H1: The U.S. and Chinese online store sites will show cross-national image differences in terms of the total number, color saturation, realism, main ethnic preference, and representations of gender and social distance of images. Specifically:
- H1a: The Chinese sites will have more images than the U.S. sites.
- H1b: The Chinese sites will have more images of high color saturation.
- H1c: The Chinese sites will have fewer images of high realism.
- H1d: The Chinese sites will have more images of Asian people, while U.S. sites will have more images of White (Caucasian) people.
- H1e: The Chinese sites will have more images of females.
- H1f: The Chinese sites will have more images of far social distance.

H2: Over time, such differences will tend to become more pronounced.
H3: Image differences will reflect cultural differences between the U.S. and China.

These hypotheses are grounded in the findings of previous research. According to Hofstede and Bond (1984), China shows a low level of uncertainty avoidance, while the U.S. shows a medium level, suggesting that Chinese sites would provide more choices (a larger total number of images) than would U.S sites (H1a). According to Singh et al. (2003, 2006), Chinese websites use more bold colors and animation than U.S. websites (H1b), whereas U.S. websites have more realistic themes(H1c). Singh et al. (2006) also report that Chinese customers show greater preference for highly adapted (i.e., localized) websites, which means they may prefer websites that they are familiar with and that are consonant with their own culture, e.g., using Asian faces (H1d). In terms of gender and social distance, based on Hofestede and Bond's (1984) dimensions of culture, Chinese culture tends to be masculineand collectivistic. Masculinity suggests the possibility of more images with males than with females (H1e). Collectivism suggests a preference for group activities, leading to a likelihood of more images with a group of people than only one individual. Such images can be coded as 'public' (Bell, 2001; Hall, 1966; Kress et al., 1996), which is a far social distance (H1f). Since shared cultural schemas and cultural congruity can facilitate web communication (Luna et al., 2002), such image differences should reflect cultural differences between the U.S. and China (H3) and will tend to become more evident over time (i.e. localized, or divergent), so as to adapt to the local culture and attract and serve local customers (H2).

3.3. ANALYTICAL PROCEDURES

Based on Bell's (2001) framework, visual content analysis was conducted to analyze all images on the homepages of the sample sites.

3.3.1. General measurements for all images

The total number of images on each website and the average number of images on the U.S. and Chinese sites were calculated to provide a general quantitative description. Then ways of representing images were analyzed in terms of realism and color saturation (Kress & van Leeuwen, 1996). According to Bell (2001), modality can be defined as the represented 'realism' of an image, given the sensory coding orientation, based on degrees of color saturation. In this research, realism and color saturation of an image were coded separately, with three values for each: high, medium, and low.

3.3.2. Specific measurements for images with human objects

Images with human beings were further analyzed in terms of their gender, race, and social distance to shed light on embedded cultural preferences.

Human beings appearing in these images can be regarded as idealized exemplars to promote purchase. Their gender and race (Kapidzic & Herring, under review) can indicate the ideal, or preferred, self-presentation in the two cultures. These variables are coded with the following values: gender (Male, female, both) and race (white, Asian, black, more than one race).

Social distance (Bell, 2001; Hall, 1966; Kress & van Leeuwen, 1996) can indicate the invisible boundaries and psychological space that are accepted and preferred in interpersonal interaction between people of a certain cultural background, and thus it can suggest the communicative traditions embedded in different societies. Social distance can be defined in terms of how much of the (human) participant's body is represented in the frame of an image (Bell, 2001; Kress & van Leeuwen, 1996). Bell divides this variable into six values: intimate, close personal, far personal, close social, far social, and public. However, in order better to highlight the differences between the two cultures, these six values were condensed into two categories in this paper: close (intimate, close personal, far personal) and far (close social, far social and public).

3.3.3. Statistical tests to identify globalization and localization

Statistical tests (T-tests) were conducted to measure the differences between images on the U.S. sites and the Chinese sites over time. In this study, globalization is operationalized as convergence—that is, if statistical significance exists concerning the use of images in the earliest records, but no statistical significance exists concerning the latest snapshots, globalization can be said to have occurred. Localization can be operationalized as divergence—no statistical significance exists in the use of images on the earliest records of the U.S. and Chinese sites, but statistical significance exists in the latest snapshots. In this way, the tendency over time of the websites—whether they are becoming increasingly similar (convergent) or different (divergent)—can be identified.

3.4. RELIABILITY ASSESSMENT

Two coders were involved in the research. For the whole sample, the percentage of interrater agreement is 88.7%, and Holsti's coefficient of reliability is 0.895. This high level of agreement suggests a high reliability of the variables coded in the study.

5. Results

A total of 2562 images, including 317 images with humans, were collected and analyzed from the five U.S. and five Chinese online store websites from 1998 to 2011. Figure 1 charts the total number of images on each site over time. For each site, the total number of images increases. Comparing the first record and the 2011 snapshot, the increase is stable and smooth, except for three Chinese sites (Dangdang, Qqshop, and Paipai) which exhibit sharp increases from 2008 onwards.

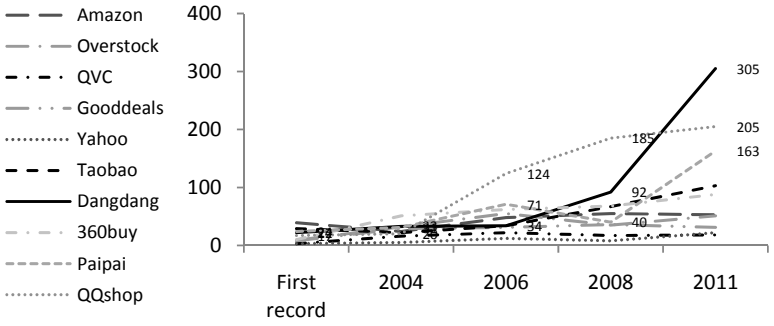
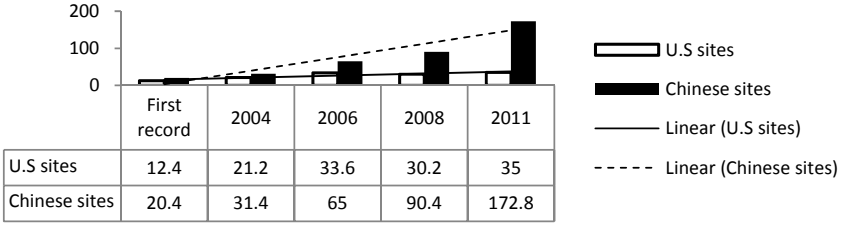


Figure 1. Total number of images on each site over time

Figure 2 shows the average number of images on the U.S sites in comparison to the Chinese sites. Linear trendlines indicate that the Chinese sites exhibit a stronger tendency to present many images than do their American counterparts: There is a dramatic increase from 20.4 images in the first records to 172.8 images in the latest records. In contrast, the U.S. sites exhibit a slower and more stable increase, from 12.4 images on the earliest version to 35 images on the latest version.

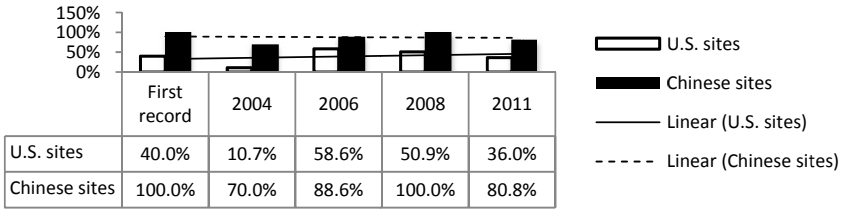


	First record	2004	2006	2008	2011
U.S sites	12.4	21.2	33.6	30.2	35
Chinese sites	20.4	31.4	65	90.4	172.8

Figure 2. Average number of images on the U.S vs. the Chinese sites over time

In terms of color and brightness, the Chinese sites always use more high color saturation images than the American sites. Both the U.S and Chinese sites show a stable tendency and there is no dramatic change over time: High color saturation images on

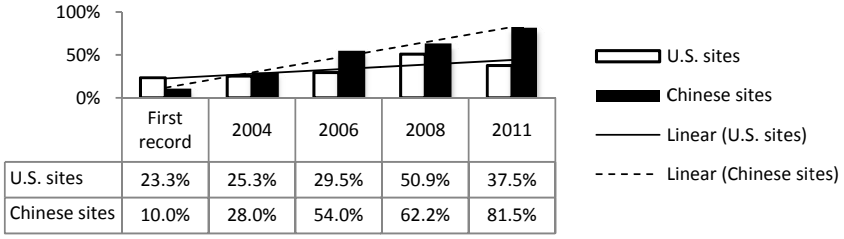
the U.S. sites always account for a relatively low proportion (less than 50%), whereas the majority of images presented on the Chinese sites (more than 70%) have high color saturation. This is shown in Figure 3.



	First record	2004	2006	2008	2011
U.S. sites	40.0%	10.7%	58.6%	50.9%	36.0%
Chinese sites	100.0%	70.0%	88.6%	100.0%	80.8%

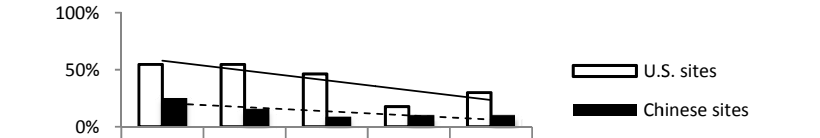
Figure 3. Average % high color saturation images on the U.S. vs. the Chinese sites over time

Figures 4, 5, and 6 show the percentages of high, medium, and low realism images, respectively, on the U.S. and Chinese sites. The trend lines indicate that although both the U.S. and Chinese sites tend to present more high realism images over time, the Chinese sites show a clearer and stronger tendency and end at a much higher percentage. For medium realism images, although both the U.S. and Chinese sites decrease in use of such images overall, the U.S. sites tend to use more medium realism images since 2008 and show a higher percent of usage than the Chinese sites. For low realism images, the U.S. sites tend continuously to use more such images over time, whereas the Chinese sites dramatically decrease in use of such images (65% vs. 8.7%).



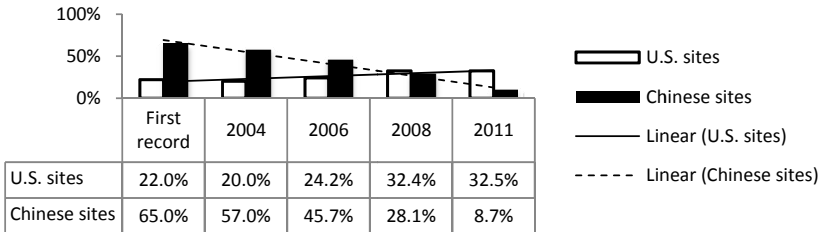
	First record	2004	2006	2008	2011
U.S. sites	23.3%	25.3%	29.5%	50.9%	37.5%
Chinese sites	10.0%	28.0%	54.0%	62.2%	81.5%

Figure 4. Average % high realism images on the U.S. vs. Chinese sites over time



	First record	2004	2006	2008	2011
U.S. sites	54.7%	54.7%	46.3%	17.7%	30.0%
Chinese sites	25.0%	15.0%	8.6%	9.3%	9.8%

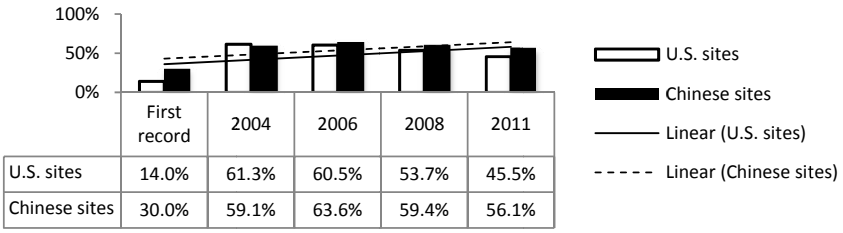
Figure 5. Average % medium realism images on the U.S. vs. Chinese sites over time



	First record	2004	2006	2008	2011
U.S. sites	22.0%	20.0%	24.2%	32.4%	32.5%
Chinese sites	65.0%	57.0%	45.7%	28.1%	8.7%

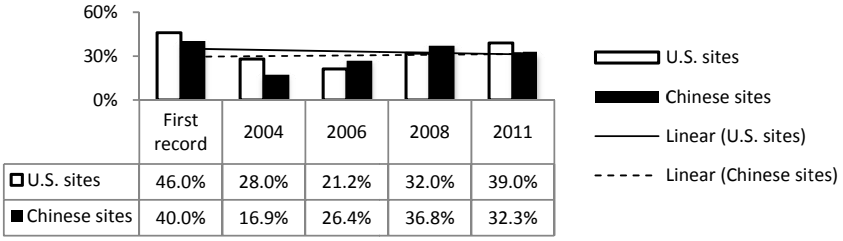
Figure 6. Average % low realism images on the U.S. vs. Chinese sites over time

Images with human beings were further investigated in terms of the features for humans described in the Methodology section. Figures 7, 8, and 9 show the average percentages of "female," "male," and "both" images on the U.S. and Chinese sites over time. Both the U.S and Chinese sites tend to use more female images and fewer images with both genders. The percentage of male images on the latest snapshots of the U.S. and Chinese sites is not dramatically different from that on the first records (39% vs. 46% and 32.3% vs. 40%), although the percentages fluctuated in between: After greater use in the earliest period, both cultures' sites tended to use fewer male images until 2006. After that, the percentage of male images increased again.



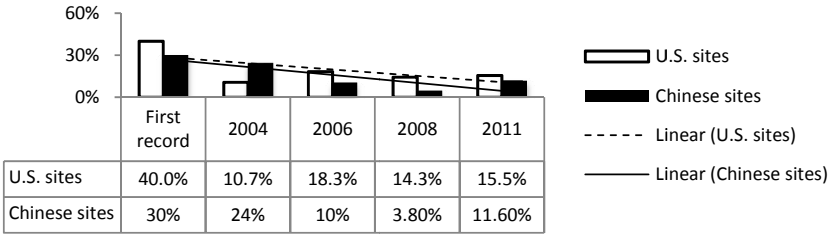
	First record	2004	2006	2008	2011
U.S. sites	14.0%	61.3%	60.5%	53.7%	45.5%
Chinese sites	30.0%	59.1%	63.6%	59.4%	56.1%

Figure 7. Average % female images on the U.S. vs. Chinese sites over time



	First record	2004	2006	2008	2011
U.S. sites	46.0%	28.0%	21.2%	32.0%	39.0%
Chinese sites	40.0%	16.9%	26.4%	36.8%	32.3%

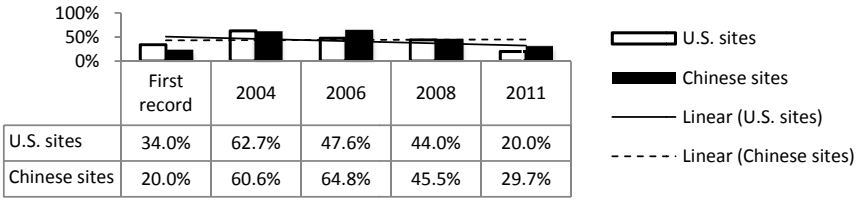
Figure 8. Average % male images on the U.S. vs. Chinese sites over time



	First record	2004	2006	2008	2011
U.S. sites	40.0%	10.7%	18.3%	14.3%	15.5%
Chinese sites	30%	24%	10%	3.80%	11.60%

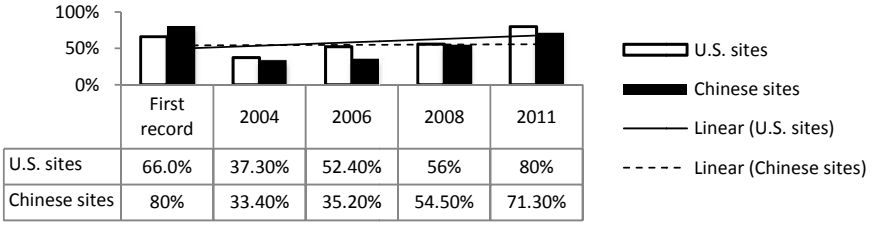
Figure 9. Average % both gender images on the U.S. vs. Chinese sites over time

As regards social distance, Figures 10 and 11 show the average percentages of "social close" and "social far" images on the U.S. and Chinese sites over time. Both the U.S. and Chinese sites exhibit a fluctuating tendency: From the first record period to 2006, they both tended to use more "social close" images and fewer "social far" images. From 2006 to the present, however, both tended to decrease "social close" images while increasing "social far" images. Overall, the U.S. sites show more obvious trendlines of increase and decrease, while the Chinese sites tend to be more stable.



	First record	2004	2006	2008	2011
U.S. sites	34.0%	62.7%	47.6%	44.0%	20.0%
Chinese sites	20.0%	60.6%	64.8%	45.5%	29.7%

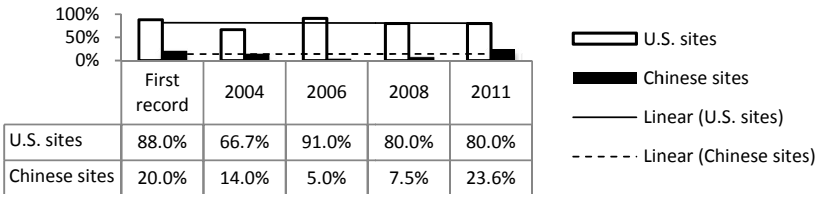
Figure 10. Average % "social close" images on the U.S. vs. Chinese sites over time



	First record	2004	2006	2008	2011
U.S. sites	66.0%	37.30%	52.40%	56%	80%
Chinese sites	80%	33.40%	35.20%	54.50%	71.30%

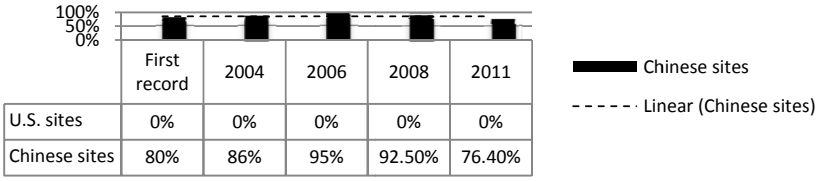
Figure 11. Average % "social far" images on the U.S. vs. Chinese sites over time

Figures 12, 13, and 14 showstrong race differences between the U.S. and Chinese sites: The majority of images on the U.S sites are of White people (more than 80% at most times), with few Black images and no Asian images at all. In contrast, the majority of images on the Chinese sites are of Asians (more than 80% in most years), with no Black images at all. However, the Chinese sites also use some White images. Although the percentage dropped from 2004 to 2008, it increased again to 23.6% in 2011.



	First record	2004	2006	2008	2011
U.S. sites	88.0%	66.7%	91.0%	80.0%	80.0%
Chinese sites	20.0%	14.0%	5.0%	7.5%	23.6%

Figure 12. Average % Whiteimages on the U.S. vs. Chinese sites over time



	First record	2004	2006	2008	2011
U.S. sites	0%	0%	0%	0%	0%
Chinese sites	80%	86%	95%	92.50%	76.40%

Figure 13. Average % Asianimages on the U.S. vs. Chinese sites over time

	First record	2004	2006	2008	2011
U.S. sites	12%	33.30%	9%	20%	20%
Chinese sites	0%	0%	0%	0%	0%

Figure 14. Average % Blackimages on the U.S. vs. Chinese sites over time

Table 2 summarizes the statistical significance (T test results) of differences between images in the earliest and latest snapshots of the U.S. and the Chinese sites.

Table 2. Statistical significance (T test results) of differences between images on the earliest and latest snapshots of U.S. sites and Chinese sites

*p<0.05, **p<0.005, ***p<0.0005

Differences in:	**First record**	**2011**
Average number of images	0.108	0.021*
Percent of high color saturation images	0.0074*	0.0009**
Percent of high realism images	0.242	0.0023**
Percent of medium realism images	0.253	0.009*
Percent of low realism images	0.022*	0.012*
Percent of female images	0.15	0.579
Percent of male images	0.634	0.545
Percent of "close" images	0.916	0.667
Percent of "far" images	0.701	0.537
Percent of White images	0.029*	4.3E-05***
Percent of Asian images	0.016*	5.2E-05***

6. Discussion

Based on the descriptive patterns and the statistical analysis, two main findings can be identified: 1) The U.S. and Chinese online store sites show cross-national image differences, and 2) the extent (and number) of such differences increases and becomes more significant over time.

Hypothesis 1 is partly supported. The U.S. and Chinese online store sites indeed show cross-national image differences in terms of the number of images, their color saturation, realism, and main ethnic preference, although no differences in terms of representations of gender or social distance in images were found.

For each site and on average, H1a and H1b are supported. Chinese sites use more images than U.S. sites at all stages studied. This is true even though bandwidth limitations in China are greater than those in the US., and have been since the earliest stage of our data collection (TeleGeography, 2011).Chinese sites also exhibit a strong preference for using high color saturation: They have more colorful and brighter images than the U.S. sites from the very beginning. Images on Chinese sites tend to be light, bright, and colorful, with high color saturation, while those on U.S. sites tend to be monochromatic or dark colored, with low color saturation.

H1c is not supported. At the very beginning, Chinese sites used more low realism images than the U.S. sites. This finding is consistent withSingh et al.'s (2003) research, where Chinese sites used more fantasy and imagery images, while U.S. sites had more realistic themes. However, the reverse is evident in 2011: Chinese sites present many more high realism images and fewer low realism images than their American counterparts. This conflict with the previous findings is understandable when considering the risks associated with online business environments: Establishing credibilityis especially crucial for e-commerce websites. Such sites can only provide a virtual shopping environment; users cannot physically see or touch products but have to make their purchase decisions completely based on information they encounter online—images, text, video, and audio. Thus, an essential function of these websites is to provide sufficient and reliable visual product information. However, at present, fraud occurs more often in China than in the U.S. According to BBC news (2011), more than 1,000 fraud cases on Taobao were claimed in both 2009 and 2010, and two executives at Alibaba resigned after a rise in fraudulent sales. Therefore, Chinese websites tend to provide images of high realism as much as possible to demonstrate the credibility (and, hopefully, the high quality) of their products.

Uses of White, Asian, and Black images on U.S. and Chinese sites are also very different; thus H1d is supported. In this respect, American and Chinese sites are designed and presented differently, based on their customers' preferences for familiarity: Human beings of the same race, corresponding to the ethnic make-up of the offline local society, may make customers feel more comfortable and facilitate their purchasing decisions. It is notable, however, that Chinese sites still use some White images, which suggest a tendency to orient to Western culture and Western fashion.

However, H1e and H1f are not supported. No statistical difference was found for the use of male and female images, or for "social close" and "social far" images, in the first record or in the latest snapshots of the U.S. and Chinese sites. Both U.S. and

Chinese sites show a consistent trend to increase female images and slightly decrease male images, as well as to increase far images and decrease close images, over time.

The consistency of gender and social distance representation can be interpreted in terms of gender roles and web genre. Traditionally, females are responsible for shopping for the family. In order to attract female shoppers and stimulate their purchasing, it is necessary to present more images with female models. In addition, online store sites can be regarded as an "adapted genre," since they emerge by "modify[ing] a genre and communicat[ing] in a way that invokes only some of the expected aspects of a form" (Crowston & Williams, 2000, p. 203). They represent the adaption of offline commercial activities and traditional commercial sites to the growing digital domain. This genre is still closely related to the offline genres (department stores, shopping malls, etc.), and they share a similar main purpose—to provide product information. Far images (presenting most parts of a human body, or more than one human being) can present more comprehensive information about the "whole" product than close images (showing only a face or a few parts of a human body). In addition, most images are embedded with a "zoom" button, so customers can use this button to see a larger version and more details of a product.

Hypothesis 2 is supported, as shown by the contrast between the statistical significances of the first and latest records reported in Table 2. The evolution of such differences is in the direction of localization rather than globalization for the Chinese sites. For the total number of images, the difference between the U.S. and Chinese sites becomes significant over time: In the first record, the difference did not achieve statistical significance at the level of $p< 0.05$; however, by 2011 it was significant. For the use of high color saturation, the statistical significance increases from $p=0.0074$ in the first record, which means it was strongly evident from the very beginning, to $p=0.0009$ in 2011, which means it became even stronger. In terms of realism, at the very beginning, only the difference in low realism showed statistical significance; however, by 2011, the differences in all levels of realism were significant. Finally, for both the first and the latest records, different uses of White, Asian, and Black images on U.S. and Chinese sites show statistical significance, and these differences became increasingly significant in 2011 compared to the first records.

In fact, the results show three types of longitudinal trends: 1) the average number of images, percent of high color saturation images, and high/medium realism images shift from no difference to divergence; 2) the use of low realism images and the percentages of White and Asian images start out divergent and become more divergent; and 3) the gender and social distance presented in images are similar and remain stable over time. Based on the operationalization given at the outset of this paper, therefore, no trend towards globalization (i.e., from difference towards convergence) is evident, while a trend towards localization (i.e., towards divergence) for Chinese sites is significantly evident in 1) and 2) above. This trend does not apply to the U.S. sites, because the Chinese sites started out on the U.S. model, whereas the U.S. sites were already "localized"—i.e., oriented to American users—to start with.

Hypothesis 3 is partially supported. Cultural differences indeed impact some image differences, as discussed above. For example, based on Hofstede's cultural dimensions, China shows a low level of uncertainty avoidance, while the U.S. shows a medium level, consistent with there being more choices (a larger total number of

images) on Chinese than U.S sites. However, the masculine and collectivist Chinese culture does not significantly impact the visual information presented on Chinese online shopping websites in terms of gender and social distance. This finding mirrors that of Zhao and Jiang (2011), who did not find expected evidence of collectivism in profile photographs on a Chinese social network site. Technological developments and today's rapidly changing global environment may be causing some modifications to China's traditional values, contrary to Hofstede's (1991) claim that cultural dimensions are stable (Jones, 2007). Alternatively, the similarities in terms of gender and social distance across cultures can be interpreted as features determined by a common web genre—online store sites—which remained constant over time. In addition, economic and psychological factors (e.g., fashion, the business environment, requirements of credibility, desire to emulate Western culture and Western fashion) play important roles.

7. Conclusion

This longitudinal study of images on the homepages of successful U.S. and Chinese online store websitesshed light on the impact of cultural factors on the evolution of online store websites and revealed a tendency for Chinese sites to diverge increasingly from U.S. sites over time in how they present visual information.

Descriptive and statistical content analyses showed that the U.S. and Chinese online store sites exhibited some cross-national image differences from the outset, and the evolution of such differences was in the direction of localization rather than globalization for the Chinese sites: At the very beginning, Chinese sites tended to resemble U.S. sites, which were the founders of online stores, but they became increasingly divergent and culture specific over time. At present, Chinese sites exhibit different features compared to their earlier versions and compared to their American counterparts: more images, higher color saturation, higher realism, and more Asian images. At the same time, the American and Chinese sites share some common features in terms of gender and social distance. In these latter respects, the web genre itself may determine the presentation of visual information and outweigh cultural differences.

These conclusions are limited by the small number and the types of websites analyzed (they are large, famous, and successful, but are they representative?), as well as the types of image features analyzed in this research. In an expanded study, the effects of other image variables (e.g., the social behaviors and social roles of people in the images) and their associations with cultural differences should be taken into account. In addition, further research is required to confirm the findings by analyzing more (e-commerce) websites in other cultures, as well as by investigating user perceptions of the websites. For example, a study of users could be conducted to examine whether Chinese users feel more comfortable with the current versions of the Chinese shopping sites than with the U.S. sites or the older Chinese sites.

Still, the findings in this paper are important in that they illustrate that globalization need not occur at the expense of localization. Although English-language Western culture is widespread in today's Information Age, and other cultures tend to borrow especially from U.S. culture, those other cultures are not necessarily undermined. Some, like China, use the Internet to strengthen their own identities, leading to an increasingly diverse and dynamic world market.

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