The Impact of Language and Culture on Perceived Website Usability

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Abstract

Online retailers offering their products across national and cultural borders are eager to enhance the usability of their websites to attract large numbers of visitors. The results of the present research show that the perceived usability increases when the website was originally conceived in the native language of the user. Thus, translation, even though of excellent quality, creates a cultural distance which impacts on the web users' evaluation of the site. Conversely, where translation is less important, such as in the evaluation of the quality of an offer, a consumer's native language has no impact on the buying decision.

Keywords: E-business; Website usability; Language; Culture; Translation

JEL classification: ?

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1. Introduction

E-business is reaching technological maturity due to the growing penetration of broadband connections to the Internet.[1] This has created strong effects for B2B and B2C online purchasing. The figures provided by the US Census Bureau for E-commerce in the year 2004 show an increase of 7.6 percent over the previous year or of US$ 245 billion.[2] The first quarter 2006 U.S. retail e-commerce sales volume increased 25.6 percent from the first quarter of 2005, whereas total sales rose only 8.0 percent in the same period.[3] Online consumer spending in 2005 amounted to US$ 143.2 billion and gained 22 percent over 2004 spending.[4]

A similar development can be observed in Europe. In 2005, B2C E-commerce in France, for instance, saw a growth of 44 percent over the year 2004 and reached a volume of euros 7 billion.[5] While the proportion of online sales is still low, with around 9 percent of total turnover in the EU-25 and 10 percent in the U.S.,[6] this rate should continue to grow steadily, as the main indicators are rising. This can also be seen from the sheer number of Internet users of over 1 billion worldwide, with an increase of 183.4 percent from 2000 to 2005.[7]

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[1] A dynamic e-business environment. Retrieved May 25, 2006 from:
http://europa.eu.int/information_society/ecowor/ebusiness/index_en.htm
[2] U.S. Census Bureau E-Stats: E-Commerce 2004, May 25, 2006, http://www.census.gov/estats
[3] U.S. Census Bureau News, May 18, 2006. http://www.census.gov/mrts/www/ecomm.html
[4] E. Burns (2006). Online retail sales grew in 2005.
http://www.clickz.com/stats/sectors/retailing/article.php/3575456
[5] Le commerce électronique en France - Edition 2006.
http://www.benchmark.fr/catalogue/publication/50/etude-le-commerce-electronique-en-france-edition-2006.shtml
[6] E-Business Watch Special Report (July 2005): Overview of International e-Business Developments.
http://ec.europa.eu/enterprise/library/lib-information_society/libr-info_society.html
[7] Internet Usage Statistics. Retrieved May 28, 2006 http://www.internetworldstats.com/stats.htm

Originally, having an online presence and proposing low prices seemed to be sufficient conditions for success in E-commerce. However, neither the simple fact of being online nor low prices guarantee service quality, and customers have faced some of the following problems: the website was difficult to navigate, the inability to carry out online transactions, non-compliance with delivery times, products not delivered, unanswered emails, and inaccessible or inadequate information. According to a poll conducted by Harris Interactive Inc., 89 percent of all online customers have experienced problems when trying to complete transactions online, and as a result 34 percent have switched to a competitor.[8] Consequently, as in traditional stores, the service quality of commercial websites seems to play a vital role in the success of E-business. While some of the encountered problems may be due to technical issues or errors in software writing, there are also other factors that come into play.

1.1 – The influence of language and culture on website usability

While most marketers have recognized the necessity to adapt the print and broadcasting media to the specific preferences of a target culture (de Mooij, 2005), this is not yet common practice for websites. To this day English is still the only language of many websites. Although Heckman and Schmidt (2000) predicted already several years ago that by the year 2005 70% of Internet users would speak another language but English and that online shoppers would click away from a site that was not in their native language, multilingualism or multiculturalism on the Web are not yet common standard. The reason may be that the translation of websites is costly and time consuming. If companies want to make sure that the translation is

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[8] A study about online transactions. http:www.tealeaf.com/downloads/tealeaf-poll_Harris.pdf

effective and that the meaning is not changed or blurred, it is necessary to do a back translation into the original language (Harrison-Walker, 2002). If a business decides to have an online presence in several languages, this process needs to be repeated for each language. Although this procedure may be followed conscientiously, the authors of this paper argue that even an excellent translation cannot guarantee that the web users will actually "decode" the message properly, if it was originally written in a different language. This is due to the fact that the decoding process takes place according to culture-specific frames of reference passed on to all individuals during their primary socialization. Processing of information is closely linked with language and cognitive schemas (D'Andrade, 1992), which help us to store information in specific categories. These schemas result from adaptation to a certain environment and are shared by all members of a specific culture (D'Andrade, 1987). Hence, the cognitive effort required to process information decreases when a website is congruent with the user's culture (Luna et al., 2002). Therefore, a culturally adapted website results in greater ease of navigation and a more positive attitude towards the site.

Singh et al. (2005) followed up this concept and analyzed a total of 93 websites from local companies in China, India, Japan and the USA. Their results showed clear correlations between the cultural content of the websites and the cultural dimensions established by Hofstede (1980) (i.e. Individualism, Collectivism, Power Distance, Uncertainty Avoidance, Masculinity) and by Hall (1976) (High-context, Low-context). They therefore see a strong need for marketers and international companies to localize their websites in order to increase efficiency. Adapting a website to a

specific culture requires the use of "cultural markers" (Badre, 2000), i.e. interface design elements that are preferred in specific cultures.[9]

In addition to different culture-specific preferences related to the content and design of websites (Fitzgerald, 2004), it can be assumed that there are also clear differences in the online shopping behavior of representatives from different ethnic cultures even within the same country. This idea derives from findings on cross-cultural mall shopping values comparing English- and French-speaking Canadians as described in a study by Michon and Chebat (2004).

In an empirical investigation on consumer emotional state and online shopping behaviors Mummalaneni (2005) has found out that the quality of Web design impacts heavily on the emotional state of online shoppers. His research results suggest that arousal is crucial to keeping the consumer at the site and that the amount of pleasure derived from exploring the website correlates with the number of items purchased. It is obvious that both arousal and pleasure are directly linked to the usability of a website.

Apart from the more commonly cited factors determining the usability of a website, such as the ease of navigating the site, the efficiency of design or the degree of error avoidance (Flavián et al., 2006), one dimension of service that influences the usability of a site considerably is the quality of its language, and ultimately its compliance with the culturally determined metaphors, attitudes and preferences of its target groups (Ferreira, 2002). According to Hillier (2003), translations of contents, culture and context play a significant role in the way people, especially consumers,

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[9] Badre (2000) lists the following web design elements: color, spatial organization, fonts, shapes, icons, metaphors, geography, language, flags, sounds, motion, preferences for text vs. graphics, directionality of how language is written, help features, and navigation tools.

perceive an e-commerce website. Likewise, he states that web designers will unconsciously draw on their own cultural norms (and their culture-specific cognitive schemas) when creating a website. Consequently, the process of translating a website in order to make it accessible to users from other cultures may require also a change of the overall design, as the usability of the site will depend on the culturally based expectations of the users. Even though the authors of this study recognize the importance of various design aspects on website usability, they will focus only on the aspect of language (cognitive schema) and the cultural context related to language.

As Flavián et al. (2006) demonstrate, website usability enhances customer satisfaction, trust, and ultimately loyalty. In a multicultural and multilingual world it could therefore be argued that sites that address different populations should reach them in a manner that reflects their respective cultural contexts and linguistic preferences.

1.2 – *Existing research and implications for the business world*

Research provides evidence of cultural differences on the web (Singh and Matsuo, 2004), especially with regard to content (Robbins and Stylianou, 2003) or perceived usability, satisfaction and consumer trust (Flavián et al., 2006). Some authors also propose that "language, culture, religion, and other factors may be important to a user's impression of the website" (van Iwaarden et al., 2004). There are, however, no studies available that correlate the efficiency and user-friendliness of a website with the cultural and linguistic background of its designers. So far, research about culture and the web has primarily focused on a comparison between very diverse cultures such as the U.S. and Japan (Singh and Matsuo, 2004) or the US and

Korea (Choi and Geistfeld, 2004). These authors have found language and culture to be the reasons for major differences concerning the content and design features of websites. Hillier (2002) also proposes a study on language, cultural context and website usability comparing Western and Eastern cultures. However, no results have been published to this date.

While very diverse languages and largely distant cultures have attracted the interest of researchers, there are no accessible findings that show a different degree of usability for Internet users coming from countries with a smaller cultural distance, e.g. Sweden and Norway or Spain and Italy. Also, no results have been available so far showing the impact of a web designer's mother tongue on the effectiveness of websites used in a country with more than one official language, like Canada or Switzerland. As Hillier (2003) suggests, a website becomes user friendly when the minds of the designers and the users meet, i.e. when users understand the website implicitly and when there is no interference with 'uncomfortable' elements that could be misinterpreted.

For companies striving to reach a global Internet presence or to be equally attractive to different ethnic groups within one country, the question arises whether they can reach their aim with one and the same website that is translated into different languages, or whether they will have to customize the design of local sites for consumers in different cultures using different languages. Given the high costs involved in web design and the updating of web pages, many large companies such as IBM or UBS have so far opted for a translation of the same website and have not taken into account cultural preferences pertaining to the type and presentation of information.

2. Objectives and hypotheses

The objective of this paper is to show that a simple translation of a website, notwithstanding its quality, is not enough to ensure the site's performance for consumers from a different culture. More precisely, we can formalize this proposition in the form of a hypothesis where

H1: A site conceived in language A will be perceived by users of that culture as being more usable than the same site, once translated, would be perceived by users of culture B

This first hypothesis is based on Hillier's (2003) proposition which suggests that as a website gets translated, the natural logic of the original design might get impaired, thus affecting its perceived usability.

Conversely, if the translation of a site can affect its perceived *usability*, there is no reason to believe that the translation would affect the perceived *quality of the information* available on the site, especially if the translation is good. Stated otherwise, while a translation does not affect the nature or the quality of the information provided on a website, a translation, notwithstanding how good it may be, will not be able to make the website as *usable* as it was in its original culture. This translated into our second hypothesis:

H2: Irrespective of the language in which a website was originally conceived, users of all cultures will perceive its offers as being of equivalent quality.

In brief, the authors intend to suggest that people with a different cultural background but living in the same country perceive a website that was written and designed by a representative of their own culture as being *more usable* but *not necessarily* as one that would have a *better quality of offers*.

3. Methodology

In order to test those two hypotheses, a study was conducted in Canada where, because of the official bilingual status of the country, most websites exist both in French and in English. Nevertheless, sites are rarely redesigned or even adapted. In most cases, such as the ones selected for this study, a high quality translation is the only form of modification.

For the present study, two websites were selected. The first site was *Destina.ca*, a travel site owned by Air Canada. Although this site exists in a French as well as an English version, it was originally developed in English (with the web designer's native language being English). The second website, *BELAIRdirect.com*, an insurance site, also exists in both languages but was originally written and designed in French (with the web designer's native language being French).

A total of 204 consumers were randomly recruited via a hyperlink placed on each company's website. This procedure was mainly intended to recruit genuine consumers who have at least minimal experience with both the Internet and with the website in question. Each consumer who showed an interest in our study by registering and providing relevant contact information was then invited to participate in a laboratory navigation session. Consumers were paid $50 in exchange for their participation. The majority of consumers was in the 25-34 age group (55%), male

(68%), and had a full-time job (52%). The large majority had more than three years of experience with the Internet (89%) and only 13 percent of consumers had bought something online from one of the two companies in the past.

In line with the seminal work of Davis (1989) on technology acceptance, an extensive laboratory study was conducted. Consumers were asked to visit the insurance site, the travel site or, in some cases, both sites.[10] For each site, consumers were asked to perform a specific task (namely to enquire about a car insurance policy or to buy airplane tickets) using the version of the native language. In order to control for potential order effect, for those who had been asked to evaluate both sites, those were presented for evaluation in a random sequence.

During navigation and throughout the experiment, participants were told to verbalize out loud every thought that went through their minds, whether it regarded difficulties encountered or various aspects of the site that surprised them, or simply a description of what they were doing. This approach, founded in the work of Simon (1979) and Ericsson and Simon (1993), is known as protocol analysis. It has proved to be very useful for website analysis (Sénécal et al., 2002). The analysis of the qualitative data provided by this approach (Nantel et al., 2005), provides strong convergent validity for the various scales used in order to assess the perceived usability of the various sites.

Following their verbalizations, consumers provided an evaluation of the performance of each site using a variety of scales. Those scales measure several

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[10] Only 28 consumers evaluated both sites. Two separate sets of analyses were conducted in order to control for a potential order effect. First, all the analyses were conducted without this subgroup. Second, all analyses were also conducted while controlling for the order in which the sites had been evaluated. Both series of additional analyses generated results equivalent to those presented in Tables 1 and 2.

dimensions pertaining to the quality of a website. Two of those dimensions were considered in this study: the *usability of the site* and the intrinsic *quality of the offer*. While usability was measured with items such as "This site is easy to use", "It was easy for me to find my way around" or "It was easy to learn how to use this site", the quality of the offer was measured by items such as "This site offers a wide variety of products", "The site offers a good delivery policy", "The site is trustworthy". The structure of the scales as well as the various procedures used in order to assess their level of reliability and various forms of validity are presented in Bressolles and Nantel (2004 a, b). Both subscales were highly reliable with respective Cronbach's alpha of 0.949 and of 0.929. Results were similar across the two sites. Thus based on this procedure, consumers were asked to give their ratings of each site using a series of seven-point items. For each of the two dimensions of interest, means were computed using the three appropriate items. The results presented here are based on those means.

To ensure that no potential bias between the two linguistic groups could be generated on account of different levels of experience with each site, a comparison of consumers' experiences with each site across linguistic groups was performed. The level of experience with the Web in general and with both sites specifically was the same for French and English consumers.

4. Analyses and Results

For both linguistic communities Table 1 presents the means scores for the usability dimension of each site, while Table 2 does the same for the quality of the offer. For the usability score, the *Destina* site (originally conceived in English) received an

overall score of 3.83, with Anglophones (n= 53) rating it better (mean=4.14) than Francophones (n=75; mean=3.34). Conversely, the *BELAIRdirect* site, originally conceived in French got an overall appreciation of its usability of 4.84. The respective evaluation showed a reversal of the first case. This time, the site got a better evaluation from Francophones (n= 53; mean= 4.99) than from Anglophones (n=51; mean = 4.32). In both cases the difference was statistically significant.

Although both sites were evaluated positively by both groups, the results presented in Table 1 clearly indicate (t-test; p values < .05) that French speakers gave a higher rating than their English counterparts to the insurance site (the one originally conceived in French and later translated into English), while English speakers gave a higher rating than their French counterparts to the travel site which had originally been created in English and later translated into French.

Those results show that *where translation does matter*, as for the perceived usability of a site, *a consumer's native language does have an impact*. This result is crucial since it has been shown (Bressolles and Nantel, 2004) that perceived usability has a direct impact on consumers' propensity to complete a task on a given site. It has also been shown that it influences consumers' willingness to return to this site. Thus, even if a translation is perfect, the natural structure of a site still reflects the original logic (cognitive schema) of its native culture and thus, as in these two examples, it can reduce its perceived usability.

Conversely, results presented in Table 2 show no significant difference between the two linguistic communities when considering the intrinsic quality of the offer proposed by each site (t-tests; p values > .05). While, overall, the quality of Destina's offer was rated 4.3, Belairs's was rated 4.56. As hypothesis 2 had suggested, on this

dimension no difference was found, between the two cultural groups. This second set of results clearly suggests that *where translation matters less*, such as in the evaluation of the quality of an offer, *a consumer's native language does not have an impact*.

5. Applicability of Results

The research results described in this paper clearly show that even a good translation may diminish the user-friendliness of a website for the population. If this is true for a country like Canada where – in some areas – a major part of the population is bilingual, it is even more likely to apply to websites that are used in different cultures. Therefore it is to be expected that further studies on the usability of multilingual websites, such as the one Hillier (2002) proposed, will also produce the expected results. Their outcomes should even be more convincing if the sample consists of respondents from Western and Eastern cultures, where the languages are dramatically different and the cultural contexts are much more diverse than in the study described in this paper.

Many of the large players on the Internet like *Amazon* or *Yahoo* but also smaller companies like *Honka* (http://www.honka.com) a Finnish based producer of log houses, have opted for localized websites (Yli-Jokipii, 2001). In doing so they have responded to forecasts that the global Internet community would become increasingly multicultural and multilingual (The Global Battle, 2000).

By following the principle "create, translate, and localize" the Finnish firm *Honkarakenne Oy* pursues a policy that accommodates to linguistic and cultural preferences of its customers in the different subsidiaries all over the world. Not only

do the web designs differ greatly from the Finnish websites (there are two, one for speakers of Finnish and one for speakers of Swedish), even the type of information provided varies from country to country. The types of houses portrayed on the welcome pages of the *Honka* subsidiaries correspond to local cultural preferences and are placed in natural settings appealing to users of the respective target cultures. In doing so, the designers of the country-specific websites have – consciously or unconsciously – used findings from the anthropologist Edward Hall (1977). Hall differentiates between low-context cultures (such as the USA, Germany, and Scandinavia) where the message of the written or spoken word is more important than pictures or other types of information, and high-context cultures (such as Japan, China, or Latin America) that rely heavily on contextual clues. In those cultures the overall environment in which the message is delivered (colors, authority and role of the speaker or writer, setting, etc.) provides more substantial meaning than the actual spoken or written word. Consequently, for instance the models of the Honka houses on the Finnish website are not placed in a natural setting, i.e. the pictures are cut out of the context, while the Japanese models are set in a harmonious environment with trees and lakes.

Although the managers of *Honkarakenne Oy* at the headquarters in Finland may originally have taken the decision to have culture-specific websites for different reasons, namely with the purpose to give subsidiaries more freedom of action and to attract the interest of investors (Yli-Jokipii, 2001), the positive consumer responses and the business results have most likely confirmed the chosen strategy, as the websites still differ greatly between the countries where *Honka* houses are sold.

Another convincing example of excellence in localization is the website of the official tourist office of France, *Maison de la France* (www.franceguide.com). It was recently given special mention by the 2005 LRC Best Global Website Award for the large array of languages it offers together with the up-to-date content adapted to each market. This website even differentiates between speakers of German located in Germany, Austria, and Switzerland. The decision to do so may be based on the assumption that there are culture-related preferences among speakers of the same native language in different countries. The offers provided on the site differ also between English-speaking Canadians and US-Americans.

6. Implications for E-Business

There are some important implications businesses can draw from the research results obtained from the Canadian study. Above all, they need to be increasingly aware of the tremendous effects of primary socialization/enculturation together with the acquisition of the mother tongue not only on people's cognitive schemas but also on the way they approach and solve tasks. This is even more surprising, as we should think that growing up and being educated in the same environment (i.e. the secondary socialization process, which usually takes much longer), would supplant much of the learning of our early stages of development. However, as Scollon and Wong Scollon (2001)[11] point out, the period of primary socialization not only determines our social behavior but also our discourse systems.

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[11] Scollon, R. and Wong Scollon, S., 2001: "Whatever discourse systems we may become members of later in life, the discourse systems which we enter through primary socialization have a weighted advantage over any we enter into later on." p. 164.

Consequently, even if we learn other languages in the course of our lives, the first language we have acquired will always by the one that shapes our cognitions and emotions. Based on this knowledge, companies will have to decide to what extent the products they offer on the Web require them to design language and culture-specific websites.

Based on extensive measurements pertaining to the quality of websites, this study shows that the mere translation of a site, even though it may be of good quality, is not sufficient to ensure that its initial acceptance can be maintained. It is therefore suggested that usability tests be performed on translated sites. Based on such results, managers could decide how to redesign them, in part or in totality, in order to make them more amenable to each and every cultural community they target.

Along those lines, recent research by Barnes and Vidgen (2003) has shown that the perceived usability of a site has a significant impact upon its overall evaluation, upon the nature and efficiency of consumers' clickstream strategies (Sismeiro and Bucklin, 2004) as well as upon their likelihood of aborting or completing a given task (Nantel et al., 2005).

For all of those reasons, managers should always be concerned about the quality of their Websites, especially about their usability dimension. Should sites be localized or merely be translated? By the end of the day managers will have to take this decision by pursuing a cost benefit analysis. Then the following question will arise: "How much is it worth gaining half a point on the usability scale?" If this means a lot for a company, then a mere translation of a website might not be good enough.

7. Limitations and Further Research

One limitation of the present study is its focus on only one country with two official languages, namely Canada. As suggested before, it might be of interest to investigate whether similar results are reached when repeating the study in Belgium or Switzerland, both countries with three official languages, or in Finland, a country with two official languages. Other relevant studies could look at the correlation between cultural distance and web usability. For E-business it might be helpful to know whether the degree of usability is higher between culturally close countries like Italy and Spain or culturally distant countries like Germany and Taiwan.

A second limitation concerns the choice of websites in this present study. One might argue that a travel site and an insurance site would naturally differ substantially in character and may therefore meet with varying degrees of acceptance by the users. The results might indeed have been more obvious, if the authors had compared two websites offering the same type of product. However, it needs to be underlined that the present research does not focus on the successful offer of a particular type of product on the Web. Instead it concentrates on the question whether the fact of providing customers with a site developed in their native language as opposed to a good translation has an impact either on the perceived quality of the offer or on the perceived usability of the website.

8. Conclusion

While it seems clear that Internet users are more inclined to abandon an online purchase, if the website is not in their own language and if their foreign language skills are not sufficient to feel comfortable with "the small print", very little research

has been done so far on the impact of translations on the user-friendliness of websites.

The present study shows that the *perceived usability* of multilingual websites depends not only on the *quality* of the translation but to a clearly measurable extent on whether the *linguistic* background of the web designers matches that of the site users or not. On the other hand, translation seems to be of lesser importance when it comes to the quality of the offer, where the consumer is likely to apply more objective criteria such as the quality and price of comparable products offered by competitors.

The study was conducted in Canada with a sample of 204 consumers from both linguistic communities, English and French native speakers, who had to test two different bilingual websites in their corresponding native language. Although both sites were evaluated positively by both groups, French speakers gave a higher rating than their English counterparts to the site originally conceived in French and later translated into English, while English speakers gave a higher rating than their French counterparts to the site which had originally been created in English and later translated into French. Although results seem quite convincing, further research will have to be done in other cultures to confirm the results.

For businesses it will be important to decide individually whether the additional expenses incurred for the development and maintenance of truly localized websites can actually result in increased customer loyalty and ultimately in a larger number of online purchases than those achieved through translated websites.

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Tables

Table 1: Means scores for the "Usability" dimension

Participants	Destina.ca (created in English)	t values	Statistical significance	Bélair-Direct.com (created in French)	t values	Statistical significance
Anglophones	4.14			4.32		
		2.6	p = .011		2.21	p = .029
Francophones	3.34			4.99		

(1= low, 7= high)

Table 2: Means scores for "Quality of the Offer" dimension

Participants	Destina.ca (created in English)	t values	Statistical significance	Bélair-Direct.com (created in French)	t values	Statistical significance
Anglophones	4.32	.13	p = .897	4.56	.01	p = .989
Francophone	4.28			4.56		

(1= low, 7= high)