

# Exploring the Multilingual Efficiency of Urban Online Spaces: Implications for Culture-Centered Design

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**Abstract.** This paper builds up a picture of how multilingualism is supported in various aspects of urban online spaces. The main assumption of this study is that language is an indispensable element of culture; thus, understanding how a multilingual city facilitates multilingualism in terms of provision of and access to information, can deepen our understanding for supporting cross-cultural Human Computer Interaction (HCI). This study explores how multilingualism is supported in urban online spaces of Limassol, a location of increased inward migration and a city that holds a prolonged multilingual character. Data include manifestations of multilingualism or monolingualism in various online contexts, such as official websites and digital media. Findings demonstrate several aspects of multilingualism, as well as implemented policies and practices for promoting a multilingual online locus. As a result of the findings, suggestions for best practices for the online spaces of multilingual cities are put forward, as well as implications for cross-cultural HCI.

**Keywords:** Language · Multilingualism · Interculturalism · Multilingual online locus · Language visibility · Cross-cultural HCI

## 1 Introduction

The multicultural and multilingual character of today's communities is reflected in day-to-day encounters with people, in business transactions, in education, in advertisements, road signs, media and online spaces. As cultural diversity has become a new challenge for Human Computer Interaction (HCI), there is a need for reviewing and evaluating the study of culture in HCI in a systematic way [1, 2]. The main assumption of this study is that language is a fundamental element of culture; thus, understanding how a multilingual city facilitates multilingualism in terms of provision of and access to information, can deepen our understanding for supporting cross-cultural HCI. This study explores how multilingualism and plurilingualism are supported in the urban online spaces of Limassol, a location of increased inward migration and a city that holds a prolonged multilingual character [3]. The study is an attempt to bring forward important aspects of cross-cultural HCI, such as language visibility and invisibility, linguistic support at the level of governance or policy, as well as social inclusion and

intercultural dialogue in online spaces. The study also looks into the challenges and obstacles involved in creating and managing multilingualism in linguistically diverse online spaces. The purpose of this paper is to provide an overview of the current situation of multilingualism as this is manifested in urban online spaces in significant spheres or aspects of the city life; that is (a) the public sphere, (b) educational sphere, (c) economic life and (d) the private lives of citizens. The aforementioned four key spheres are delineated in order to provide for comprehensive exploration of how multilingualism is depicted in online spaces of city life. Ultimately, this paper builds up a picture of how multilingualism is supported in significant online aspects of multilingual citizen communities. The study is related to the research activities of a wider network of different European cities who attempted to sketch multilingualism in different cities (see also, [4, 5]).

## 2 Short History of Language Diversity in Limassol

Cyprus has historically had a multilingual and multicultural character since ancient times. This, however, is now more evident than ever before. The population composition of Cyprus today is largely heterogeneous as the country is inhabited by people of diverse cultural backgrounds. In the past, migration in Cyprus used to be associated with large-scale emigration of Cypriots abroad in the early twentieth century in search of jobs and better standards of living; and later between 1960 and 1975, especially following the Turkish invasion of the island in 1974, to countries such as the UK, the USA and Australia [6]. More recently, however, Cyprus has experienced a large wave of inward migration due to various world events and situations that have sent numerous groups of people in Cyprus searching for relocation opportunities.

For historical reasons, the most commonly spoken languages in Cyprus in general are Greek by Greek-Cypriots, and Turkish by Turkish-Cypriots since the Ottoman Era (1571–1878). Under Article 3 of the Constitution, Greek and Turkish are both official languages, but de facto they are used as such in the Republic of Cyprus and the occupied area respectively. As a principle, the Republic of Cyprus government recognises to members of all religious groups and communities the right to use their own language in private and in public, and to receive instruction in it. The Greek Community in Cyprus use both Standard Modern Greek (SMG) – the official language in Greece – and the Greek Cypriot dialect, which belongs to the South-Eastern Greek subgroup and is considered to have remained closer to ancient Greek because of its isolation.

Greek has no legal status in the occupied area. The Turkish currently spoken in Cyprus is the Turkish Cypriot dialect and mainland Turkish, the latter mainly imported by settlers and troops. Before 1974, Turkish was used in all services (together with Greek and English) in the Republic of Cyprus. Since the 1974 division, the use of Turkish has been discontinued, as most Turkish-Cypriots were displaced to the occupied area of the island. However, in the Republic of Cyprus it is still used in passports, identity cards, birth certificates and other official documents. It is also offered as an elective language in government schools.

Other languages and cultures also left their mark on Cyprus. English has always had a strong presence on the island because of the island's colonial history. English was the official language during the British Administration in 1878–1960. As a result, it has left a strong linguistic influence on the island. English has been used as the *lingua franca*, by both communities along with Greek, and by other people who now live in Cyprus. It is used in many domains such as business, tourism and education. French was used during medieval times (1192–1489), and Italian during the Venetian Rule (1489–1571). Assyrians, Persians, Arabs and others also spent some time in Cyprus during different times for various reasons and left their linguistic and cultural mark on the island. All these languages and cultures have enriched the linguistic and cultural mosaic of Cyprus through the centuries.

Limassol is the second largest city in Cyprus, with a population of 235.056 [7], the largest city on the island in geographical size, and also the largest port in the Mediterranean transit trade. Limassol today includes five municipalities. In the last decades, Limassol has developed into one of the most important maritime, tourism, commercial and service centres in the area. Limassol is also known for its long tradition in cultural issues. It gives the possibility to the visitors to attend a great number of activities and visit many museums and archaeological sites. Foreign populations residing in Limassol are of a diverse cultural and linguistic background. Greece and the UK are among the top countries sending immigrants to Cyprus in general and to Limassol in specific. Other foreign populations hail from countries such as Russia, Poland, Romania, Slovakia, Bulgaria, Latvia, Ukraine, Belarus, Syria, Egypt, Lebanon, Jordan, Sri Lanka, the Philippines, India, Bangladesh and China (Limassol: Results of the Intercultural Cities Index, 2011). Due to the geographic location of Limassol, people from all over the world call Limassol their home. Although the majority of Limassolians are Greek-speaking, other languages like English, Russian, Arabic, Chinese, Indian, or Vietnamese are also heard in the street, and a mixture of cultures is evident in everyday life.

### 3 Multilingualism in Online Spaces

To be able to explore important aspects of cross-cultural HCI in online spaces and find out whether people communicate interculturally effectively, we needed to examine if there is evidence in online space for understanding cultural differences and share cultural information and meanings effectively. But what does an online space, a website entail? According to Papadima-Sophocleous [8], “a web page is usually a combination of text and visuals, sometimes accompanied by sound, and in more sophisticated cases information is presented in a multimedia form (text, buttons, images, photos, animation, sound, video, and special effects)”. In terms of text, one needs to consider which language or languages are used and which form of the language(s). Visuals and symbols complementing or supporting the meaning of the text need to be carefully selected as they may have a different meaning in different cultures. And if a web site is more sophisticated, one needs to consider how much this helps understanding the message by users from different linguistic and cultural backgrounds.

Communication with people from different cultures is not a new phenomenon. People have been travelling for centuries, transacting and exchanging culturally and linguistically. Fast travel, international media and the Internet have made world communication much more accessible. Communication occurs not only between people who travel, but also between people of different cultures who live together in the same spaces such as in the public sphere, economic life, the private life of citizens, and the educational sphere, locally and internationally. Knowledge of other cultures is of vital importance in order for communication between people of different cultures to be effective and in order for all parties to be able to emerge with the same understanding. To achieve that, both the web developer and the web visitors need to be interculturally competent, in other words they need to have the "...abilities to understand different modes of thinking and living ... and to reconcile or mediate between different modes present in any specific interaction ..." [9].

Over the years, some sort of common cyber culture was developed. Aspects such as netiquette were designed to guide internavts into how to behave online and neticons accompanied people's messages. However, as more and more people of diverse linguistic and cultural background cultures used the Internet, cultural misunderstandings started to occur. This led to the development of approaches towards a web of more effective intercultural communication. Elements such as language, culture, layout and design were taken into consideration in this light.

Although English seems to be the most dominant language on the web, more and more websites are developed in many languages [10]. Wherever English is used, either as mother tongue or as a lingua franca, and since there is no standard English, every effort needs to be taken to use a form of English comprehensible to most site visitors (writing style, short and simple sentences, use of specific words, idioms, slang, and turns of phrase, similes and metaphors, that may have different cultural connotation in another language, etc.). The aims of each site should be to reach as many of its intended visitors as possible, in the best possible way. This should determine the choice of language(s). Very often, organisations opt to provide translated versions of their sites. In such cases, caution needs to be exercised for the message to be mediated appropriately, both linguistically and culturally in order to avoid cultural misunderstandings.

According to Schneiderman [11], a website's interface intermediates between a system and users, therefore it is important that it accommodates the need of the users and makes it easy to use. Website user interface needs to take into consideration the users' cultural differences [12]. In general, organisations need to ensure sensitive presence on the Internet. This extends to the website presentation, the site layout and design, which also send messages of meanings that could be misunderstood. These include interface, navigation and screen design, images, and colours. According to Marcus and Baumgartner [13], "people from different countries/cultures use user-interfaces (UIs) in different ways, prefer different graphical layouts, and have different expectations and patterns in behaviour".

Cultural misunderstanding in online spaces may be caused by elements such as reading order; length of words and phrases may cause difficulties with graphical navigation methods and may lead to screen redesign ([16]; as cited in [8]). Images may

also be the source of cultural misunderstanding. Images can have different meaning in different cultures. Images must be appropriate, clear and non-insulting to their intended audience [8]. Colour is another aspect that may cause cultural misunderstanding as different colours have different meanings among cultures as well as within a culture ([14, 15]; as cited in [8]). Site development and management are also important and need to take into consideration where the audience comes from, locally or internationally and accommodate their needs as well, and take into consideration other aspects such as downloading time, and streaming ([16]; as cited in [8]).

Successful multilingualism in online spaces is based on human and technical factors; in other words, it requires cultural competence and appropriate software solutions. Parameters such as language, culture, layout and design need to be taken into consideration in order to have effective online intercultural communication. A standard user interface is and can no longer be used in the design of a website. Cultural differences are now also being explored. Several studies explored interface designs. Husmann [17], for example, investigated the localisation of web user interface by examining the cross-cultural differences in home page design. SD Erişti [18] explored the cultural factors in web design of 15 university web sites chosen randomly from 11 countries. Cyr and Trevor-Smith [19] investigated the localisation of web design by comparing German, Japanese, and U.S. website characteristics. Cyr et al. [20] also carried out a four nation study which addressed differences in preference and perception of website design across cultures.

Intercultural online design entails the manifestation of elements of language, culture, layout and design. For the purposes of this study, we explored intercultural online design with an emphasis on the use of language/s in various websites accessed and utilized by users coming from different cultural backgrounds.

## 4 Methodology

As noted earlier, the aim of this study is to create a multiplicity of up-to-date narratives on the multi/plurilingual realities of the online space of Limassol in terms of provision of and access to information. Four key spheres were explored related to the public sphere, education sphere, economic life, and the private lives of citizens. Examples of online spaces varied in each sphere, but included digital artefacts which illustrated the multilingual reality of the online spaces of the city, like websites and social networking pages or communities.

- (a) The public sphere included online spaces, such as websites, of the local municipality/city council, public services (health, transport, tourism) and media (television, newspapers, digital media). Types of data collected in this sphere included the websites of the municipalities of Limassol, the website of public services and local media.
- (b) The educational sphere included online spaces, such as websites of public schools (from day nursery to adult education), vocational schools, non-governmental organisations (NGOs) involved in formal or informal education, independent/private schools (including bilingual schools), complementary schools (language academies), and cultural organisations/societies/associations. Types of data

collected in this sphere included websites of public and private schools, as well as complementary schools and cultural organisations.

- (c) The economic sphere included online spaces, such as websites of large local/national companies and multinationals companies based in Limassol, industries and manufacturing corporations, SMEs, service providers (professional services), and financial transactions' companies. Types of data collected in this sphere included information from the website of chambers of commerce and employers' associations as well as companies and SMEs based in Limassol.
- (d) The private sphere included online spaces, such as websites and communities within social media, that demonstrated local or city-wide activities (such as festivals) that were not initiated by the public sphere (although they may have received public funding) but were organised instead by local community groups, online spaces of services that are offered by local communities (including volunteer activities), local support networks and religious activities and organisations/structures. Types of data in this sphere included examples of social network groups and websites of festivals, religious activities, networks of migrant groups, clubs, sports, and other cultural activities (theatre, music, etc.).

A reporting template was employed in order to facilitate data recording and language visibility in online spaces. The template captured concise information from websites related to (a) language options in online spaces, and (b) access to information in the different languages in online spaces.

We articulated the following research hypotheses, with regard to multilingualism in online urban spaces in Limassol:

- Visibility. We hypothesise that some languages are more visible than others in online urban spaces, and that this visibility/invisibility is meaningful. We hypothesise that sometimes, when languages are visible, the visibility operates at a symbolic level. This symbolism is seen and understood by some, and largely ignored by others. Languages which are highly visible in online space may not be the languages in which the various transactions and policies of city life are enacted.
- Challenges/obstacles. We hypothesise that both challenges and obstacles will appear inhibiting or facilitating communication in online urban spaces.

## 5 Findings

This study explored language visibility in online urban spaces in the four spheres (public sphere, educational sphere, the economic life, and the private life of citizens) demonstrating the strong presence of Greek, English and Russian. Although the official languages in Cyprus are Greek and Turkish, English is more visible in online spaces in Limassol than any other language, whilst Greek dominates in the educational sphere and English and Russian in the economic life (see Table 1).

**Table 1.** Language provision in the online spaces of Limassol in the four spheres (public sphere, educational sphere, economic life, and the private life of citizens).

Sphere	Language provision in online urban spaces examined							
	Monolingual				Bilingual		Three or more languages	Total
	Greek	Turkish	English	Russian	Greek/Other <sup>a</sup>	English/Other <sup>a</sup>	Three or more languages	
Public sphere	4	0	0	0	9 (English <sup>b</sup> [9])	1 (Russian [1])	5 (Greek, English <sup>b</sup> , Russian <sup>b</sup> [4], Greek, English <sup>b</sup> , Russian <sup>b</sup> and German <sup>b</sup> [1])	19
Educational sphere	52	0	7	2	4 (English [4])	1 (Chinese <sup>b</sup> [1])	2 (Greek, English <sup>b</sup> , Spanish <sup>b</sup> , French <sup>b</sup> , German <sup>b</sup> , Italian <sup>b</sup> , Russian <sup>b</sup> [1], Greek, English, Russian [1])	68
Economic sphere	0	0	27	0	5 (English [5])	6 (French [1], Russian [4], Arabic [1])	8 (Greek, English, Russian [6]; Greek, English, Russian, Hebrew, Romanian [1]; Greek, English, Russian, Chinese [1])	46
Private lives of citizens	3	0	12	0	7 (English [7])	1 (Russian [1])	2 (Greek, English, Turkish [1]; Greek, English, French, Italian, Portuguese, German, Chinese, Spanish [1])	25
Total	59	0	46	2	25	9	17	158

<sup>a</sup>In brackets other(s) language(s) used; in square brackets number of online spaces using the specific language (s).

<sup>b</sup>Limited information is provided in these languages.

## 5.1 Online Spaces in the Public Sphere

In the public sphere, language provision appears to be balanced between monolingual, bilingual and multilingual online spaces (see Table 1). Greek, English, Russian and German are the languages that gain visibility in the online spaces in the public sphere, yet languages that need to be boosted include Turkish, Arabic, Bulgarian and Romanian.

The integration of foreign languages in online spaces in the public sphere (e.g. in the websites of local municipalities) is often made through an information guide provided by the national authorities in English and Russian. All websites have a Greek and an English version. However, some important documents are available only in Greek and in many cases the English version of the website is not working, is under construction or has a limited amount of information available in English compared to Greek. Application forms and documents are always available in Greek and in English in most cases, but no document is provided in Turkish -the second official language of Cyprus.. Yet, migrants do not only need shortened information, but to be able to access regulations and information in their mother tongue (or at least in a lingua franca).

On local level, Limassol is making efforts to improve its welcoming policies by implementing a welcoming policy instrument. The city has published a comprehensive package of information to aid newly arrived foreign residents. However, the attainment rate of Limassol's policy goals is still quite low according to the Intercultural Cities Index [3].

## **5.2 Online Spaces in Educational Sphere**

While intercultural education is an official aim of the Ministry of Education in Cyprus, measures to implement it in online spaces are unfavourable with limited information available in languages other than Greek. Having a vast majority of public schools' websites being monolingual, de facto excludes migrant children and their parents from access to important information related to their education. Symbolic use of language in one public school is provided by having the school's director's salutation translated in 6 different languages (Spanish, French, German, Italian, English, Russian). Such symbolic use of these languages enacts familiarity with the visitor of the website. Private schools are more sensitive in providing information in more than one languages -as they follow an English curriculum. A good practice noticed is the provision of information in different languages in an information pack-instead of providing the whole translated version of the website. Such a practice provides a cost-efficient way to facilitate easy access of the majority of information in another language.

Languages other than Greek and English are visible in the educational online spaces such as French, Russian, Spanish, Chinese and German. Neglected languages are Arabic, Romanian, Bulgarian, Spanish, Chinese and German, in spite of the large population of these ethnicities that reside in Limassol. Regarding languages that deserve a boost in the educational online spaces include English, together with Turkish, Russian, Chinese, Arabic, Bulgarian and Romanian.

## **5.3 Online Spaces in Economic Life**

Cyprus has always been an attractive migration pole, and labour market conditions are among the reasons that make migrants decide to settle in Cyprus. With regard to language visibility in online spaces in economic life, English, Russian and German sketch the economic linguistic profile of Limassol. The English language is used



widely within various private companies and in many industries, such as banking, financial services, legal firms, tourist organisations, hotel and hospitality enterprises, and many others. Taking into account the economic profile of the city, English, German and Russian are the strongest financial partners in Limassol, thus the visibility of these language is meaningful in terms of their presence in the economy. Remarkably the multicultural character of Limassol is also formulated by people of Asian or African origin; however, their languages appear to be neglected and thus less visible within economic online spaces.

#### **5.4 Online Spaces in the Private Sphere**

Various clubs, organisations and associations geared towards the promotion of interculturality and cooperation, human rights, multilingualism and equality exist in Limassol. Some examples of such institutions are: the Filipino Overseas Contract Workers Association of Limassol, the Cyprus-Bulgaria Business Association, the Association of Bulgarians in Cyprus, the Association of Russian-speaking Residents of Cyprus, the The Middle East Council of Churches, the Association of Recognised Refugees in Cyprus, the Bi-communal Community Centre in Limassol, etc. In these online spaces, English is dominant as these associations bring together migrants from different countries and follow the lingua franca approach for promoting their activities. Less visible languages in the online spaces in the private sphere are Arabic, Bulgarian, Romanian, Turkish, Sri Lankan, Vietnamese, Chinese, Polish, Hungarian, German, French, Slovakian and Serbian. Languages that need to be boosted, are Turkish (as official and equal state language), Bulgarian, Romanian, Roma, and Arabic.

## **6 Discussion**

Limassol is a city of increasing inward migration receiving in the last years many immigrants of diverse cultural, linguistic and economic background. This unprecedented change in the demographic character of the city has happened in a short span of time and has found the people and authorities unprepared to deal with it. Although online spaces welcome visitors from several different cultural and linguistic backgrounds, many of these spaces only represent the dominant Greek language, thus not being able to cater for the needs of culturally diverse visitors.

With regard to the languages' visibility, our primary hypothesis that some languages are more visible than others in online spaces, and that this visibility/invisibility is meaningful has been confirmed. Greek and English appear to be the most visible languages; however, this does not reflect the overall linguistic mosaic of online spaces Limassol. In general, the wide use of English – being an international dominant language - and the neglect of other languages is one of the key themes that has emerged. English is an effective way of handling overall communication and information provision in online spaces; on the other hand, it is perceived as a danger of national languages extinction. Moreover, Russian emerged as the most visible language in the

economic sphere. Therefore, we could mention that certain languages have established themselves and gained visibility based on their financial strength in the city.

Our second hypothesis relates to challenges and opportunities in language provision in online urban spaces. Online urban spaces demonstrate multiple ways of linguistic diversity, either by translating all contents of the page in more than one language, by providing an information pack with the majority of the content in several languages or by demonstrating symbolic use of language.

## 7 Conclusion

Through the analysis of the online urban spaces of Limassol, various suggestions have emerged. In general, online urban spaces need to adopt a more pluralistic perspective. To achieve this, online urban spaces need to reassess the needs of their visitors and provide a broader linguistic support in terms of access to information. Moreover, the city needs to explore the efficiency of performance of online urban spaces towards migrant citizens.

Designers may adopt cost-effective ways to involve the cultural and linguistic context in the design of their artifacts. A cost effective way for supporting linguistic diversity is to provide an information pack with the whole component of the website, and thus facilitate their visitors' access to information. Providing the opportunity to visitors to understand that the developer catered for their needs can be an important step for fostering their engagement on the website.

Limassol's linguistic support at the level of governance or policy is overall limited. A multilingual online locus needs to make an effort to accommodate its diverse citizens. The actions and initiatives to be taken include assessment of online visitors' needs and linguistic background and a vision in accommodating -even at a symbolic level- the needs of multilingual citizens. As noted by Bourges-Waldegg & Scrivener [21], a central issue in cross-cultural HCI is representations and meaning mediate action. Designing and sharing an online locus that intends to be shared by culturally diverse users needs to entail the cultural diverse needs of its users, in terms of culture and language provision.

## 8 Limitations

This study sketches multilingualism in Limassol in online urban spaces by exploring a substantial number of online spaces in four key spheres. This study does not provide a holistic understanding of all cultural aspects in online spaces in the city of Limassol. The intention was to bring to the surface current aspects of handling language barriers in online spaces. The data of this study is available to anyone that may be interested to conduct a further research on the topic. The results of the current study are limited to the particular online spaces; yet they may reflect both present and future trends of multilingualism in terms of provision of and access to information in online spaces.

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