Linguistic Landscape and Language Policies: A Comparative Study of Linköping University and ETH Zürich

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Master's Thesis 30 credits

July 2012

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This thesis is dedicated to my mother, Mahboubeh Basiri. Her support, encouragement, and constant love have sustained me throughout my life. I would not be who I am today without the motherly love and care of my mother.

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Acknowledgements

First and foremost I owe sincere and earnest thankfulness to my supervisor, Dr. Nigel Musk, who has supported me throughout my thesis with his patience and knowledge whilst allowing me to work independently. I am grateful to his quick replies, time and constructive comments. Without his encouragement and effort, this thesis would not have been completed or written. I simply could not wish for a better supervisor.

I would like to thank the Department of Culture and Communication at Linköping University for their support and assistance since the beginning of my Masters studies. I thank all members of the department for creating such a friendly environment that widened my knowledge of linguistics.

Part of the data collection in this study was carried out at ETH Zürich in Switzerland. I am grateful to this university, and all the staff who took the time to reply to my questions and the privilege of having interviews. I am truly thankful to the library at ETH Zürich, which is one of the largest scientific libraries in Switzerland with a large collection of books.

I would also like to thank Dr. Sabina Schaffner at Universität Zürich for sharing her conference paper with me, and taking the time to meet with me, and responding to my questions in terms of language policies in Switzerland.

I particularly would like to thank my husband Saeed for his kindness, friendship and support. He gives me the strength to carry on. He has also helped me in the statistical part of my study. My loving thanks go to my parents, sister and brother who have always been there for me.

1. Introduction

Examining the languages in the public space i.e. the *linguistic landscape* is an emerging field of sociolinguistics, and research focused on the relationship between the linguistic landscape (LL) and language policy has recently garnered particular interest.

This paper aims to study the linguistic landscapes of two different universities (Linköping University and ETH Zürich) in two different countries (Sweden and Switzerland, respectively) with rather different language policies. The aim is to ascertain some of the striking differences, as well as, the similarities between the two universities in terms of the public use of languages. Apart from the study of LL, the paper investigates the relationship between LL and language policy, and uncovers any contrasts which take place between top-down (posted by the university staff) and bottom-up (not inscribed by the university personnel) forces.

The study of LL in these two universities is particularly interesting; since they are home to many international students; it is thus quite likely that the national languages are not the only languages found in the linguistic landscape. Furthermore, as Sweden is a monolingual country (basically Swedish), and Switzerland is a multilingual country (German, French, Italian and Romansch), comparing the two could yield insightful results regarding the public use of different languages in these different linguistic settings. Moreover, because of the influence universities have on society, studying the university space is of importance.

This study tries to answer to the following research questions:

1) What are the visible languages in the linguistic landscape of LiU and ETH? How are languages distributed in different areas? What is the status of English in proportion to other languages in bilingual signs? How are languages distributed in top-down and bottom-up signs? What kinds of multilingual signs are present? What is a clear classification scheme for signs found in the LL, and how are languages distributed in this scheme?

2) What are the language policies of these two universities? Are there any policies regarding the languages written on signs? Are the language policies reflected in patterns of language use on signs, and are they reflected in top-down signs more visibly than in bottom-up signs?

2. Literature Review

The aim of this chapter is to give an overview of previous studies in the field of linguistic landscape and language policies, and how these two relate to each other.

2.1 Linguistic Landscape

Researching the linguistic landscape (LL) is a recently developing field of sociolinguistics and applied linguistics which concerns the "written form" of languages in public space (Gorter 2006: 2), and specially focuses on "multilingual settings" (Coulmas 2009: 14). Landry and Bourhis define linguistic landscape as "the language of public road signs, advertising billboards, street names, place names, commercial shop signs, and public signs on government buildings" (1997: 25). Ben-Rafael adds that linguistic landscape refers to any item that marks the public item from road signs to private names of streets, shops or schools, and these items are an important factor in helping visitors and residents to develop a picture of a certain place, and distinguish it from other places (2009: 40).

Landry and Bourhis claim that language planning first caused issues related to the linguistic landscape to emerge, and language planners in Belgium and Québec were among the first who wrote policies regarding the use of language on "public signs including billboards, street signs, and commercial signs, as well as in place names" (1997). However, the first use of the linguistic landscape as a field of study was introduced by Landry and Bourhis in 1997. Since then, different scholars have investigated different aspects of LL and expanded this field of study into different branches (Moriarty 2012). A selection of previous and prominent linguistic landscape studies are presented below.

Spolsky and Cooper (1991) examine the language choice (Hebrew or Arabic) in street names in the Old City of Jerusalem and assess how these names have changed throughout the years and the influence of political change in shaping the new LL. Landry and Bourhis (1997) investigate the bilingual situation in Québec. They discuss the role of LL on maintaining vitalization beliefs and language behaviours of French Canadian minorities in Québec. Ben Rafael et al. (2006) identify different patterns of LL in various communities in Jerusalem. Cenoz and Gorter (2006) compare the LL of a main street in Friesland (the Netherlands) to a main street in the Basque Country (Spain), and investigate the role of minority languages (Frisian or Basque, respectively), national languages (Dutch or Spanish) and English on signs. Finally, Backhaus (2007) analyses multilingual signs in train stations and the area around them in Tokyo. He notes the significant differences between public and private signs with regard to languages used and the position and font size of each language.

2.1.1 Linguistic Landscape Methodology

The data collection in a linguistic landscape study, as Hult states, is based on taking photographs (2009: 90). Gorter remarks that with the introduction of digital cameras, the possibility of taking an unlimited number of pictures has increased (2006: 2).

Now the question is where to photograph. Some researchers collect the data from the signs in a specific area which is usually "large urban centres" (Moriarty 2012: 75). For example, Hult (2009) took pictures of a street in the dominant commercial and entertainment district (called *Centrum*) of Malmö City in Sweden. Backhaus (2007) chose train stations and the area around them in Tokyo. Some other studies select a more restricted environment like a school or a university. For instance, Shohamy and Abu Ghazaleh-Mahajneh (2012) compare the LL of a university campus in Israel with that of two schools and two shopping areas in Ume El Pahem City in the north of Israel. Hanauer (2009) examines even a smaller context i.e. a microbiology laboratory at the University of Pittsburgh.

The last two studies mentioned above are similar to my study for the reason that both studies document the LL of a university space. Although these studies were not an initial source of inspiration for me, my reason for the selection of a university space as a study area is the same as the aim of these studies. Shohamy and Abu Ghazaleh-Mahajneh believe that studying the university space is important because of the influence universities have on society and employment (2012: 94).

The next point is whether all the signs in a specific area should be considered or not. Depending on the goal of research, the researcher him/herself decides on the number of samples to be collected. Take for example, Lanza and Woldemariam who consider photographs of all the items in the public domain of the main shopping district in Mekele City in Ethiopia (2009: 195), or Curtin (2009) who analyses only non-Chinese scripts in the LL of Taipei. Edelman (2009) identifies only the proper names of 14 shops on a main shopping street in the centre of Amsterdam. In a study conducted by Dagenais et al in Canada, monolingual signs in English were not photographed in Vancouver; instead, only monolingual signs in other languages were collected, and in Montreal, signs on only one side of each of the four streets were photographed (2009: 261). Lastly, Hult took photographs of all the signs which were "visible at street level with the naked eye" on storefronts (2009: 96).

The unit of analysis is another criterion, which should be defined in an LL methodology. A frequent reference is Backhaus' definition. According to Backhaus, a sign is "any piece of written text within a spatially definable frame […] including anything from the small handwritten sticker attached to a lamp-post to huge commercial billboards outside a department store" (2007: 66). Pennycook takes graffiti, "a hybrid form of text and picture" into account (2009: 304). Cenoz and Gorter (2006) define all signs in one establishment to be one unit. Kallen acknowledges "a single visible unified presentation" as unit of analysis (2009: 277).

As the researcher in an LL study collects a large number of pictures, the problem of categorizing numerous signs occurs. Different scholars have provided different taxonomies. Gorter mentions different elements, which can be considered in a taxonomy such as "how language appears on the sign, the location on the sign, the size of the font used, the number of languages on the sign, the order of languages on multilingual signs, the relative importance of languages, whether a text has been translated (fully or partially), etc" (2006: 3). Spolsky and Cooper distinguish between eight major types for their data collected in the Old City of Jerusalem: street signs, advertising signs, warning notices and prohibitions, building names, informative signs (directions, hours of opening), commemorative plaques, objects and graffiti (1991: 76). Kallen suggests that signage usually focuses on one or more of these areas: Deixis, Behavior, Interaction, and Cognition (2009: 274). Ben-Rafael et al. divide their private signs into "clothing and leisure, food, house-ware, and private offices", and the governmental signs are divided according to the type of institution: "religious, governmental, municipal, cultural, educational and public health" (2006: 15).

Reh (2004) proposes a model for describing and analysing multilingual texts. She arranges multilingual information into four types: 1) complementary, 2) duplicating, 3) fragmentary and 4) overlapping. In complementary texts, different parts are written in different languages, and to comprehend the meaning of the text, the reader should have a mastery of all the languages in the text. Duplicating texts have exactly the same text and information in different languages. In this way, the available languages have the same value. In fragmentary texts, the whole information is available in only one language, but some parts are translated into other languages. In overlapping signs, only part of the information is repeated in another language, while the rest of the text is only in one language (Reh 2004: 8-14). However, it is not easy to make a distinction between Reh's fragmentary and overlapping categories. Both categories refer to partial translation of a text, and there are similarities between fragmentary and

overlapping writing to the extent that Spolsky (2009) comments that Reh proposes "three" distinct types of multilingual writing, considering fragmentary and overlapping categories to be the same. Huebner also uses one definition for Reh's fragmentary and overlapping classification (2009: 78).

Another important categorisation in an LL study is to identify the sign-maker i.e. distinguishing between top-down and bottom-up signs. Ben-Rafael et al. believe that this distinction puts order in the analysis of LL (2006: 10). Top-down, government or LL from above are different terms used to describe the signs "issued by national and public bureaucracies, public institutions, signs on public sites, public announcement and street names" (Ben-Rafael et al. 2006). On the other hand, bottom-up, private and LL from below are terms used to refer to items "issued by individual social actors, shop owners and companies like names of shops, signs on businesses and personal announcements" (Ben-Rafael et al. 2006).

Even though a distinction is usually made between top-down and bottom-up signs, both play their part together in making the overall image of LL (Szabó et al. 2012: 265). In other words, LL is a "gestalt". Ben-Rafael defines gestalt as "items appearing together", and all the items are seen as one whole (2009: 43).

After defining a clear taxonomy for the data, analysis needs to be conducted. Linguistic landscape studies analyse LL items according to the languages used, the significant features, structure and semantic aspects (Ben-Rafael 2009: 40). One of the major first steps in analysing the data in an LL study is to identify the languages used in public signs in a bilingual or multilingual urban space (Spolsky 2009: 25). This can be done both quantitatively by stating the exact number and percentage of visible languages, and descriptively by only mentioning the languages seen. Identifying the various languages in a study area reflects "the relative power and status of the different languages in a specific sociolinguistic context" (Cenoz & Gorter 2006: 67). Take for example, Shohamy and Abu Ghazaleh-Mahajneh who present three languages for their data collected at Haifa University in Israel: Arabic, Hebrew, and English (2012: 97), or Brown (2012) who identifies Estonian, English, Finnish, German, Russian, and Võro in schools in south-eastern Estonia.

2.2 Language Policy

Language policy is one of the fields which has been addressed by linguistic landscape studies. Drawing on Dal Negro, LL is an instrument through which, language policy is reflected (2009: 206), and Puzey believes that LL is a contributing factor to how people understand language policy (2012: 141).

Spolsky (2004) and Shohamy (2006) both maintain that language policy applies to different domains such as the language policy in families, religious groups, the workplace, schools, villages, cities and the nation. They also apply to different levels of language such as pronunciation, spelling, lexical choice, and grammar (Spolsky 2004: 40). Shohamy contends that language policy is manifested in different ways, such as through the languages to be used on public signage, the language of instruction in schools, language tests, the languages which are called the official language(s) of a country, and the languages in government offices (2006: 140). Cenoz and Gorter state that policies related to the LL i.e. the languages that should be used on signs, go side by side with language policies for the use of language in education, the media, and other domains (2009: 56).

The relationship between LL and language policy gets much clear with Shohamy's discussion. She mentions that it is through the language policy in a given territory that one ascertains how in general, certain languages should be used in society, and in particular, in the linguistic landscape, and on public signs (2006: 55). In other words, she believes that the LL symbolises the legitimacy and priority of certain languages over other languages (110). Cenoz and Gorter maintain that language policy and LL become particularly related when some state authorities establish policies about the languages to be used on signage in education, the media, and other domains (2009: 56). Take for example the case in Israel where new language policies require street signs in mixed Jewish-Arab areas to be both in Hebrew and Arabic (Spolsky: 2004: 1). In this case, and with the new language policies, the study of street names in this region would have yielded different results than before the new policies were introduced. Some other scholars discuss the role of language policy in shaping the linguistic landscape of a region (e.g. Kallen 2009: 274). Kallen (2009) examines the LL of Ireland and its interaction with language policy and tourism. Blackwood and Tufi (2012) investigate the LL of French and Italian Mediterranean coastal towns, and the influence of language policies on the appearance of the LL.

Shohamy claims that the presence or absence of certain languages in the LL affects language policy (2006: 110). Some other scholars have taken the opposite approach i.e. language policy influences the appearance of the linguistic landscape (Blackwood & Tufi 2012: 109). For instance, Gorter, Aiestaran, and Cenoz (2012) suggest that Gorter and Cenoz's previous LL study conducted in 2006 affected the language policy of Donostia-San Sebastián in Basque Country in 2012. They claim that Spanish was much more dominant in the LL of Donostia-San Sebastián in the 2006 study, and that policy makers were influenced by the findings of this study. Today those same policy makers have developed new policies concerning the public use of the minority language Basque. As an example, all the Spanish street signs have been replaced by Basque-Spanish signs, and wherever possible, Basque has even been designated as the dominant language (2012: 159).

The distinction between top-down and bottom-up signs is another factor which contributes to the comprehension of language policy. Shohamy states that it is the difference between top-down and bottom-up signs in terms of the languages used in the public space that sheds light on the language policy (2006: 123). While the top-down flow of LL shows authorities' language preference, bottom-up signs show whether this preference is accepted and implemented by the general population (Puzey 2012: 141). On the other hand, as Ben-Rafael puts it, the distinction between top-down and bottom-up signs is significant because different signs are made by different actors for different audiences, and while top-down signs "serve official policies", bottom-up signs "are designed much more freely" (2009: 49). Referring to the LL study conducted by Ben-Rafael et al. in Israel, Shohamy remarks that in the Jewish areas, Arabic is mostly present on top-down signs which implies the status of Arabic as an official language, but it is hardly present on bottom-up signs (2006: 123).

As mentioned above, language policy has various mechansims; the ones which are related to the study of the LL are discussed here. It is through the language policy that languages are chosen to be used and learned in certain contexts (Shohamy 2006: 55). The language policy in education is actually an explicit way of imposing policy in a formal context. When a certain language is considered to be the medium of instruction in schools, it is actually imposed as a policy on learners. Another tool through which language policy is manifested is through language tests, and Shohamy believes that tests are a way of imposing language policies, and determining the power of specific languages (94-95). She further considers language tests as a tool in determining what other languages (apart from the national language) are important such as the position English tests have today in terms of university or job admittance (105).

Shohamy adds that language policy in education and language tests is often applied in the top-down domain by authorities (139).

The last point to be discussed here is the implementation of language policy. Stating a policy does not necessarily mean that this policy is practiced, and Shohamy emphasizes that in some situations the use of languages is in contrast to the policies (2006: 51). This is actually where the battle of top-down and bottom-up forces takes place. Policy makers introduce policies through top-down forces, but those who resist, introduce their language ideologies through bottom-up forces (Shohamy 2006: 51).

3. Background

3.1 Sweden

3.1.1 Languages and Policies in Sweden

Swedish is the official language in Sweden, and Sweden is mainly considered as a monolingual country. There are however, five minority languages (Sami, Finnish, Torne Valley Finnish, Yiddish, and Romani), which are recognized and protected in Sweden (Sweden.se n.d.). Swedes also have a good command of English. According to a Eurobarometer survey in 2005, 89 per cent of Swedes speak English, which puts it in first place among EU countries (Eurobarometer 2006: 13).

In a draft action programme for Swedish, it was stated that "until now Sweden has not had a language policy in the strict sense of the word; language issues have instead been dealt with as part of other areas such as education policy, cultural policy, minorities policy, integration policy, etc." (Committee on the Swedish Language 2002). However, in December 2005, the *Riksdag* (the Swedish parliament) agreed on a new policy for improving the position of Swedish to be implemented from 2009. The policy serves four goals:

- Swedish is the main language in Sweden
- Swedish should be a complete language, i.e. serving and uniting society
- The public language should be simple and understandable
- Everyone has a right to learn Swedish, to learn foreign languages, and to use one's mother tongue or minority language (government offices of Sweden 2009)

3.1.2 Linköping University

Linköping University (LiU) is one of Sweden's largest academic institutions which hosts a large number of international students every year. More than 1000 students registered at Linköping University as exchange students in 2010-2011. Yet this number does not include free movers, Masters and other international mobility students.

Linköping University has campuses in two cities (Linköping and Norrköping). The two cities are located in southern Sweden (See fig. 3.1). In Linköping, LiU has two campuses: *Campus Valla* and *Campus U.S* (Linköping University 2012). This study focuses only on Campus Valla which houses the majority of students (68%); therefore where the name of Linköping University is used, the reference is to Campus Valla in Linköping.

Fig. 3.1 Map of Sweden

Campus Valla is situated about 3 kilometers from Linköping city centre, and has several main buildings, four of which (A, C, D and Kårallen) will be covered in this study. The four building are marked in fig.3.2.
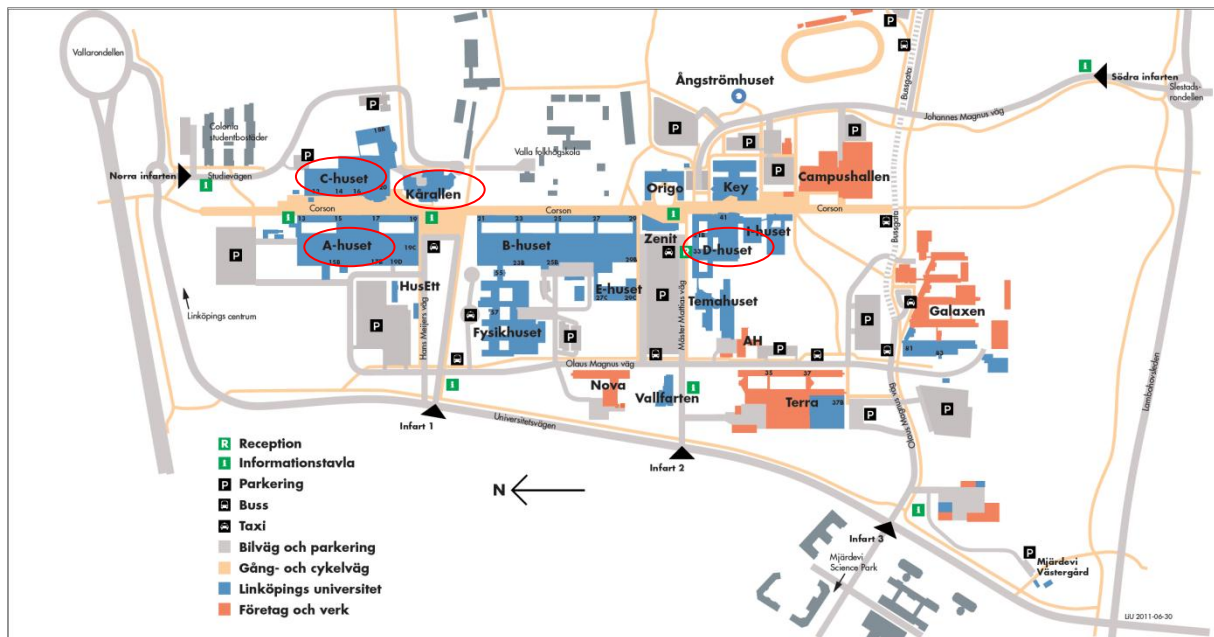
Fig. 3.2 Map of Campus Valla

3.1.3 Language Policies at Linköping University

According to language requirements on the Linköping University website, all the undergraduate programmes at LiU are taught in Swedish, and students must demonstrate an advanced level of Swedish corresponding to Swedish upper secondary education (Swedish B/Swedish 2B) or have passed the nationwide Swedish test TISUS (Test in Swedish for University Studies) so that they can study at LiU. However, if the programmes are taught in English (some graduate programmes are taught in English), students do not have to demonstrate a knowledge of Swedish (Linköping University 2011).

A knowledge of English is also required at LiU. To be qualified for both undergraduate and graduate studies, students should have a good knowledge of English which for local students corresponds to the level of English in Swedish upper secondary education (English B), and for international students it means having taken one of the well-known international English tests such as IELTS (International English Language Testing System) and TOEFL (Test of English as a Foreign Language), and getting the required grade.

Regarding the language policies of noticeboards, different departments and organizations may define their own policies. Each noticeboard belongs to different university departments, organizations or a different group of students. Depending on the organization, different

languages and contents are posted on noticeboards. In other words, if the noticeboard is located at the door of a special office or faculty, then this noticeboard belongs to the body of employees who work at that special office or faculty, and this is where they put up their public messages.

In addition, there is a general rule concerning the language and content of postings, which states that the university only accepts notices in Swedish or in English, and notices that are not in accordance with the rules are removed. The rules are documented on the university website. The policy affirms that according to the new language act in Sweden (mentioned above), all the information on the university website must be in Swedish. Depending on the target group, the information should also be given in other languages, primarily English. The university is a Swedish institution, and all public activities should be in Swedish. Higher education institutions are supposed to collaborate with society and inform them about their activities, and this should be done in Swedish. Swedish is the working language in the administrative domain, and it is also the main language of instruction.

English also has a strong position at Linköping University. According to the language policies at LiU, the university is an important element in international academic domain, and a large number of international researchers, teachers and students communicate with LiU. There are also exchange and international students studying at LiU with English as the medium of instruction. Therefore they cannot make use of information in Swedish (Linköping University 2011).

3.2   Switzerland

3.2.1 Languages and Policies in Switzerland

Switzerland has four national languages: German, French, Italian and Romansch. German is the most widely spoken language, which is the language of 64% of people in Switzerland. French, Italian and Romansch respectively are in subsequent positions (Federal Department of Foreign Affairs 2002).

Switzerland is a federal republic, and each canton has its own policies regarding the language of instruction at schools and choice of language. In German-speaking cantons, students learn French at school. In Italian and Romansch-speaking areas, both French and German are learned. Finally in French-speaking cantons, German is learned at school (Federal Department

of Foreign Affairs 2002). However, Grin affirms that although Switzerland is recognized as a quadrilingual country, each canton is considered as unilingual (1998: 3).

Proficiency in the national languages is decreasing in favour of English. Parents prefer their children to learn English as the first foreign language. There has also been a marked increase in the use of English in Switzerland. Many people speak their mother tongue and English and understand a second national language (Federal department of foreign affairs 2002). 67 per cent of Swiss people in the German part of Switzerland speak English (Werlen, Rosenberger and Baumgartner 2011: 70).

3.2.2 ETH Zürich

The Swiss Federal Institute of Technology Zurich (*Eidgenössische Technische Hochschule Zürich*) or ETH Zürich is a science and technology university and a leading research institute in Switzerland (Swiss Universities Handbook 2011). According to Academic Ranking of World Universities website, the ranking of ETH regarding the percentage of international students is 23rd in the world (Academic Ranking of World Universities 2012). Out of all the students who registered at ETH in 2010, 40.1% of them were international students from 80 different countries of the world (ETH Zürich 2011). This figure alone shows the extremely international environment of ETH.

ETH has several campuses and research buildings in Zürich (in central Switzerland) and also one campus in Basel (in northwest Switzerland) city (see fig. 3.3). The focus of this study is on the central campus (*Campus Zentrum*).

Campus Zentrum is located in the centre of Zürich and has several buildings, two of which (HG and CAB) will be covered in this study. The two building are marked in fig. 3.4.
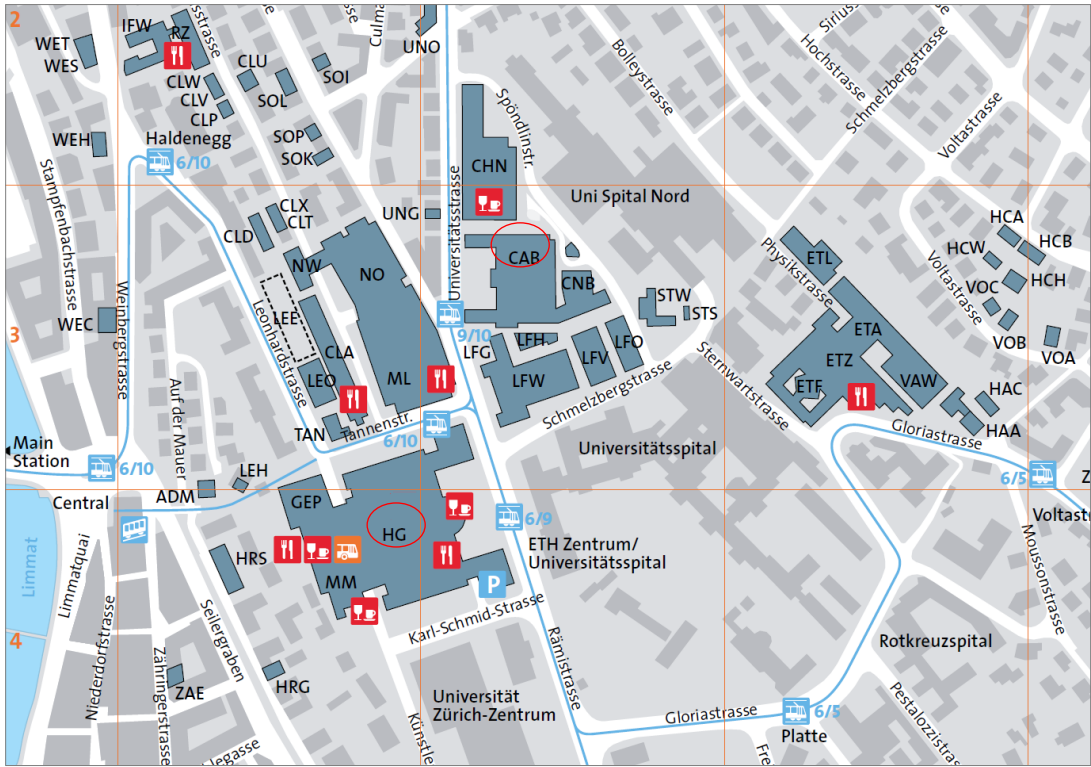
Fig. 3.3 Map of Switzerland

Fig. 3.4 Map of Campus Zentrum

3.2.3 Language Policies at ETH Zürich

According to language requirements on the ETH website, all the undergraduate programmes are taught in German and students must demonstrate an advanced level of German along with

knowledge of a second modern language which is English, Italian, French or Spanish. German and the second modern language skills are tested in an entrance exam held by the university. That means even students whose mother language is German have to pass this exam (ETH Zürich 2012).

The medium of education for almost all of the master programmes is English, but some programmes have courses in both English and German, while a few programmes are mainly taught in German. All master students should have proof of English skills by passing the required criteria in recognized English tests (ETH Zürich 2012).

Concerning the language policies of noticeboards, it is the employees at the Corporate Communications who produce brochures, design posters and exhibition stands, write media releases, publish print advertisements and web banners, and they affirm that the languages of signs should be in English or German[1]. Moreover, by the end of 2012, all the information on the university website must be in both German and English.

However, there are two large noticeboards at the door of *Hauptgebäude* (HG), and students are free to put up their notices in any language on these two noticeboards. But this policy does not apply to official noticeboards which are under the control of Corporate Communications.

In November 2008, the Executive Board approved an international strategy for ETH. One of its objectives is to notify international students and employees about the services provided by the university in both German and English. The implementation of this policy will later be discovered in chapter 5. Other objectives are to attract more students, primarily German speakers at the undergraduate level, and to break down language barriers at the graduate level by teaching nearly all Master programmes in English. ETH Zürich regards a multilingual environment as enriching and a necessary prerequisite for recruiting foreign Master students (ETH Zürich 2011).

In her conference paper, Schaffner (2011) discussed the impact of language policy issues on program development and management at the University of Zürich and ETH Zürich Language Center. She mentioned that the language policy of ETH is inconsistent. Katherine Hahn Halbheer who works with the English policy at ETH also confirmed this. She also mentioned

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[1] All the information regarding the language policies at ETH is obtained through informal interviews (2012) with one of the employees at the Corporate Communications (Katrin La Roi) and Katherine Hahn Halbheer, course administrator and English/German translator at ETH.

that there is no official translation policy at ETH, and departmental websites are usually translated into English by staff.

The importance of English as a language of research and conferences is undeniable. However, there are concerns at ETH that the rise of English will endanger the position of German, and educational researchers criticize its development (Imhalsy: 2010). Nevertheless, Christoph Niedermann who is Rector at ETH believes that by using English in master studies, they intend to promote multilingualism (an interview conducted by Imhalsy on NZZ online: 2010).

It is worth mentioning that the increase in the use of English as a lingua franca at these two universities may be due to the implementation of Bologna process. The Bologna process is implemented in 47 countries across Europe (Switzerland and Sweden are both members of the process) which aims to "create European higher education area based on international cooperation and academic exchange that is attractive to European students and staff as well as to students and staff from other parts of the world" (Bologna Process 2010). To fulfill this goal, English seems to be the language of communication in member countries. It should however be noted that the Bologna process also aims to improve language competence in languages other than English, and "in every program and at every study level a maximum of 15 ECTS can be awarded for the acquisition of specific language skills" (Schaffner 2011).

4. Methods and Data

To document the linguistic landscape, data was collected from Linköping University (LiU) in Linköping, Sweden and ETH Zürich (*Eidgenössische Technische Hochschule Zürich*/ Swiss Federal Institute of Technology Zurich) in Zürich, Switzerland. Pictures were taken of noticeboards with a digital camera. Each picture was aimed to photograph one sign. As mentioned before, a sign is defined according to Backhaus' definition as "any piece of written text within a spatially definable frame […] including anything from the small handwritten sticker attached to a lamp-post to huge commercial billboards" (2007: 66). Only signs that included text were photographed; other items such as pictures and graffiti were not considered. This is based on Gorter's and Backhaus' definition that a linguistic landscape is the use of language in its "written form" (Gorter 2006: 2), and a sign is "any piece of written text within a spatially definable frame" (Backhaus 2007: 66). Therefore the written form and text were the criteria for sampling.

To attain equivalent areas at both universities, and to capture multilingual signage, pictures were taken of noticeboards at exchange and international offices, student organization offices, and where students hung their notices for job-searching, selling furniture and the like (see table 4.1). In addition, the linguistic landscaping of the areas around the noticeboards including direction signs and warning notices was considered. Choosing these areas for photographing was due to the fact that it is in these areas where the most multilingual signage can be found.

In addition to taking pictures, I sent emails and interviewed the staff at international office, as well as people who had the responsibility to control the notices' contents and languages both at Linköping University and ETH Zürich.

4.1   Data Collection at Linköping University

Sampling was carried out at Linköping University at different times from 19 November to 16 December 2011. A total of 288 pictures were taken of four different (A, C, D and Kårallen) buildings mainly from noticeboards and where students usually hung their postings.

Out of the 288 pictures taken at Linköping University, twenty of them show a general overview of the noticeboards, so they were not counted for the reason that each advertisement or notice was analysed separately. Moreover, some of the signs were repeated within the same building; therefore, the repeated items were omitted from the study. In other words, each sign

was considered only once in each building. However, if the same notice reoccurred in another building, it was not excluded. The total number of pictures which were analysed was 239.

In the D Building, the international corner and international office were photographed with all the postings and texts that were hanging around these two areas, such as outside the library and in the corridors. The international corner is a noticeboard exclusively designed for international students with the aim of putting up postings in English only. In the C building, where student organizations hang their notices for events, parties and meetings, the large noticeboards of the main hall were photographed including all the signs and postings that were hanging around these boards. In the Kårallen Building where student organization offices such as ESN (Erasmus Student Network) are located, a sampling of all the tokens on the first floor was collected. In the A Building, there is a big cylinder around which notices and signs are hung by students. All the items on the cylinder were photographed.

4.2   Interviews in Linköping

In order to find out if there is any rule and policy towards the choice of language of noticeboards, I emailed several persons at Linköping University, and interviewed people in charge.

I found out that each noticeboard belongs to different university personnel or a different group of students. In other words, if the noticeboard is located at the door of a special office or faculty, then this noticeboard belongs to the body of employees who work at that special office or faculty so that they can put up their notices. For example, the noticeboard in the international corner belongs to the staff in the international office.

In addition, there is a general rule concerning the language and content of postings and Annika Svenvik is the person in charge. She told me that the university only accepts notices in Swedish or in English, and they remove notices that are not in accordance with the rules which are documented on the university website (discussed in chapter 3). However, she did not mention the use of other languages such as German, Spanish or French which are offered in the modern language division.

Furthermore Darja Utgof, the international Master's student coordinator, said that the notices in the international corner should only be in English, although there are notices every so often that are in Swedish which are put up by Swedish students, who sometimes do not pay

attention to what each noticeboard is for. Then employees at the international office have to remove non-English postings.

4.3   Data Collection at ETH Zürich

Examples were collected at ETH from 24 February to 16 March 2012 of similar areas to those at Linköping University. Therefore all the signs outside the exchange office in the university's main building (Hauptgebäude) and the area around the exchange office, all the tokens on the walls and noticeboards in a building that houses student organization offices (CAB Building), items at the door of the main library in *Hauptgebäude* (The Main Building), and finally two large noticeboards that belong to students' personal advertisements and postings at the entrance of *Hauptgebäude* were photographed. All the signs around these places were photographed as well. The total number of tokens collected at ETH Zürich was 183.

4.4   Problems in Data Collection

Table 4.1 shows the direct comparison between the areas at the two universities where the samplings were collected. As can be seen from the table, although I tried to acknowledge equivalent areas at the two universities, complete equivalency was not possible. One reason is that in Zürich there was not a noticeboard that entirely belonged to international students' postings in English as there was in Linköping (the international corner). In addition, although photographing the library was not a main aim at Linköping University, I took pictures of the library entrance in Zürich for the reason that in the D Building in Linköping, I collected samples around the area of international corner which included the library entrance as well. Therefore, in order to have an equivalent setting, I also took pictures of the signs at the library entrance at ETH. Moreover, in the Kårallen Building where student organization offices were located at Linköping University, few notices were hanging on the wall which belonged exclusively to the events held by student organizations; instead their postings were mostly spread in the A building. In contrast, in Zürich the student organization offices and their noticeboards were in the same place, and their notices were hardly attached to the more formal noticeboards. Finally, concerning the noticeboards that belonged to students, those at the main entrance in Zürich, and the postings cylinder in the A building are not absolute equivalents. The noticeboards in the main entrance in Zürich contained all types of personal notices that students attach, such as searching for a job, renting a room, looking for lost items, and the like, whereas in Linköping, the cylinder contained postings for companies which presented internship, events and parties and information about courses held outside of the

university such as a dance course; in other words, it did not include any personal notices put up by students.

Table 4.1 Areas of data collection

No	Linköping University	ETH Zürich
1	International corner, International/Exchange office, areas around the library entrance	International/Exchange office, areas around the library entrance
2	Postings that belong to student organizations in the C Building, student organization offices in Kårallen Building	Student organization offices and postings on the noticeboards around them in the CAB Building
3	Students' notices in A Building	Students' notices in the university main entrance

It should be mentioned that in the data collection at ETH, signs (as types) were only photographed once. In Linköping, I took pictures of every sign token, but later only considered the sign types when counting.

4.5   Interviews in Zürich

To find out about the language policies at ETH, I went to different offices to meet the right person. I realized that the employees at the Corporate Communications are the ones who produce brochures, design posters and exhibition stands, write media releases, publish print advertisements and web banners.

I interviewed Katrin La Roi who works as a public relations consultant at the Corporate Communications office. She said the postings should be in English and/or German. Apart from the role of English as a language of science, more than 60% of the university employees are non-Swiss, there are also students studying at ETH from 80 different countries of the world and that is why English is the lingua franca.

I found out that students are free to hang their notices in any language on the two large noticeboards at the main entrance of *Hauptgebäude,* but not anywhere else and not on the official noticeboards. To put up a notice on the official noticeboards of the university, students have to ask the Corporate Communications for permission.

4.6   Categorizing the data

I entered the information concerning my data into Excel to facilitate statistical calculations. Each sign was considered individually, and distinguished according to its language, and whether it was top-down/bottom-up. I also tried to assign a category to each picture. The categories were inspired by Spolsky and Cooper who distinguished between eight major types for their data collected in the Old City of Jerusalem: street signs, advertising signs, warning notices and prohibitions, building names, informative signs (directions, hours of opening), commemorative plaques, objects and graffiti (1991: 76). Nevertheless, as their categories did not match all my data, I had to define my own categories as well.

The signs could fall into many different groups, but I tried to limit the number of divisions by looking for similarities between the signs so that more signs could fit in one group. The number of categories was reduced to facilitate the comparison.

Table 4.2 provides the categories I defined for my data; however, the full definition of each category along with the exemplifications are to be found in the next chapter.

Table 4.2 Division of signs

Categories	Typical examples
advertisements	events, buying and selling, job vacancies
information	course information, miscellaneous information
instructions	Printing, registering, forms, how to apply, throwing away garbage, buying bus card
services	chaplaincy, health-care services, career services, services offered by different offices
signs	building signage, direction signs, warning notices and prohibitions
jokes	newspaper cuttings

It should be mentioned that even though I used some of Spolsky and Cooper's wordings, I did not necessarily use the same concepts. In other words, I did not group my data exactly as they did. For example, they considered opening hours to be informative, but I considered them to be building signage. That is because the opening hours in an academic environment work as permanent signs at the entrance of rooms or buildings. For the same reason, I considered directions to be signs instead of information.

There was however not always a clear-cut distinction between the signs. For some signs, it was difficult to decide what category they belonged to. For instance, I considered application forms to be instructions. Although this was not a very clear-cut choice, application forms were too narrow to be a group of their own. Therefore, I grouped them as instructions.

Another issue was the distinction between classes held by the university, and the ones offered by external institutions. As university classes inform students about the courses, I considered them to be course information, but the other classes aim to attract course participants; therefore, they fell into advertisements.

In addition to the above problems, some signs could belong to more than one category. Because having two categories for one sign would cause problems in the statistical part, I assigned only one category to each sign. As an example, see fig.4.1 which illustrates the entrance of a bookshop at Linköping University. In addition to showing the building signage, it contains an advertising slogan which makes it fall into the category advertisements. In spite of being both an advertisement and building signage, I considered it to be building signage because the name of the shop had a more dominant font size.

Another example is the signs that contain both information about a course, and also instruct students how to apply for that course. Again, these signs could be both information and instructions. For these notices, I chose course information for the reason that more text was allocated to the course information.

Fig. 4.1 A sign at the door of a bookshop

4.6.1 Sign Writer

To specify the sign writer, I distinguished between top-down and bottom-up signs. The general definition of top-down and bottom-up items was discussed in the literature review (see p. 11). In this study, top-down signs include all the signs posted by the university staff such as warning notes, direction signs, university rules, class schedules, application forms and the like. A fair number of the signs that are classified as top-down have the logo of Linköping University or ETH Zürich (See Fig.4.2) which simplifies the recognition of top-down signs. All the other signs which were not inscribed by the university personnel are considered as bottom-up, such as job vacancies offered by private companies, or event announcements put up by students.

Puzey claims that recognizing the authorship particularly in top-down signs is complex because the authority can be the regulating authority, sign initiator, owner, and sometimes designer (2012: 142). The distinction between top-down and bottom-up signs was not always uncomplicated to me either. For example, job vacancy signs provided by well-known Swedish companies such as Ericsson and Volvo can be sorted out as both top-down and bottom-up depending on the aspect one looks from. Such signs can be considered as bottom-up by the university council, and top-down by students. However, I have considered these signs to be bottom-up whether posted by big companies or by small companies. Another problematic issue in this regard is the notices posted by the university's leading student organizations. These types of signs can be considered as top-down by students who are not members of

organizations, but bottom-up by the university's employees and teachers. I decided to assign them as bottom-up signs especially because they were not posted by the university staff.
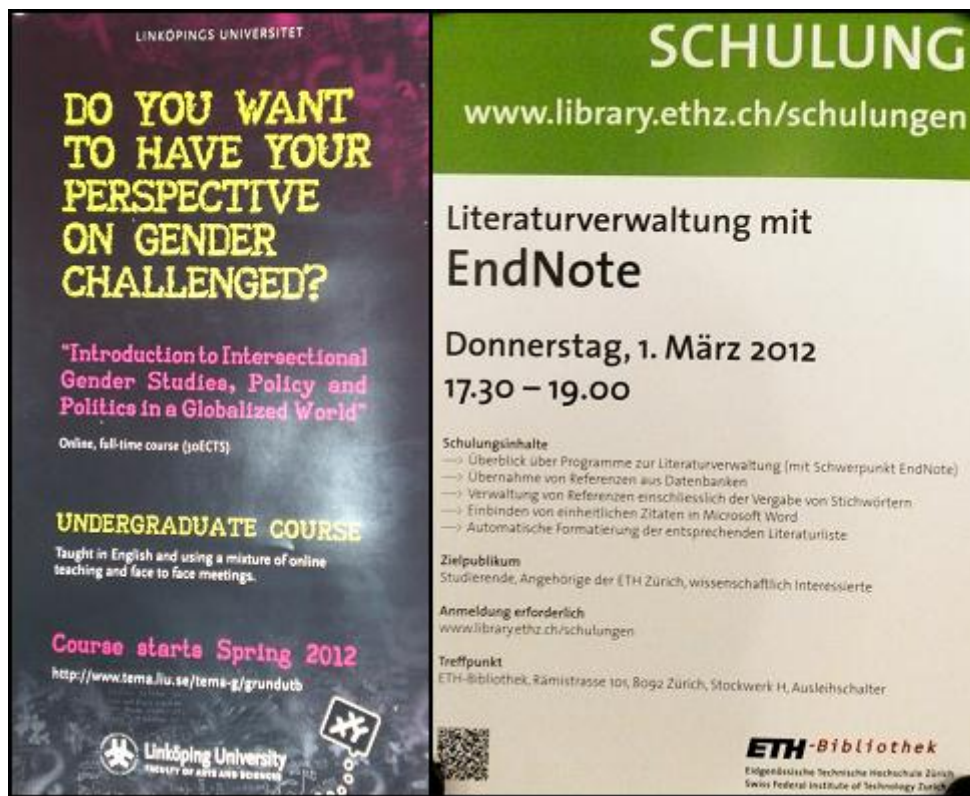

Fig. 4.2 Top-down signs at LiU and ETH with the logo of each university at the bottom

4.7   Analysing the Data

To analyse the data, I identified the number and variety of visible languages at LiU and ETH. I also divided multilingual signs into complementary, duplicating, and fragmentary (for definition see chapter 2, page 10) to examine the status of English on bilingual signs. The distribution of languages in different areas was also illustrated in charts and tables to highlight the differences in the use of languages. Then I defined each category mentioned above (see table 4.2) and examined how different languages are distributed in the different categories. I further analysed top-down/bottom-up signs to determine the language distribution in these two domains, and to find out whether language policies are reflected in the top-down domain of the linguistic landscape.

5. Data Analysis and Results

5.1 Languages on Signs

In this part the quantitative dimension of the study regarding the number and variety of visible languages in the linguistic landscape of Linköping University and ETH will be examined.

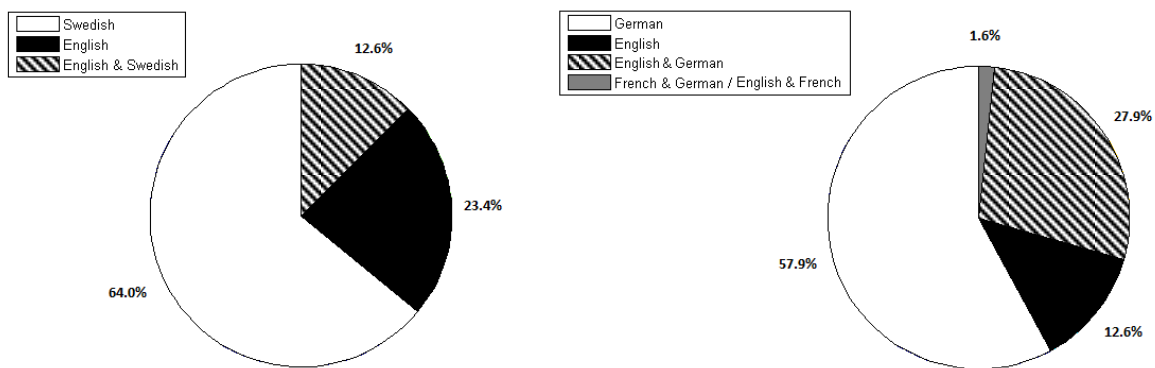The analysis of signs at LiU and ETH provides the results shown in fig.5.1:

Fig. 5.1 Variety of languages displayed at LiU (left) and ETH (right)
As French-German and French-English constitute a very small percentage, showing them in separate parts in the pie chart was not visible to the naked eye. Therefore, the detailed number and percentage of displayed languages are shown in tables 5.1 and 5.2.

By looking at the pie charts in fig. 5.1, it is clear that LiU and ETH have similar patterns regarding the variety of displayed languages. That is to say, apart from the official language at each university (Swedish at LiU and German at ETH), English is the second most visible language. In fact, English is the only language seen at LiU apart from Swedish. However, at ETH French is also displayed, albeit on only 1.6 percent of the signs (0.5% French-English combined with 1.1% German-French).

There are however differences in the distribution of the languages. LiU tends to have more monolingual signs either in Swedish or English than ETH, which uses more bilingual signs. In other words, 87.4 percent of signs at LiU are monolingual, whereas monolingual signs at ETH form 70.5 percent of signs. There are also over double the bilingual signs at ETH than the amount at LiU.

Table 5.1 Number and percentage of languages displayed at ETH

German	English	English & German	French & German	English & French
57.9%	12.6%	27.9%	1.1%	0.5%
106	23	51	2	1

Table 5.2 Number and percentage of languages displayed at LiU

Swedish	English	English & Swedish
64.0%	23.4%	12.6%
153	56	30

The pie charts clearly reflect the dominance of the official languages at both universities. English also has a strong position, but it is more visible at ETH than at LiU. In other words, combining the bilingual signs (English & German, English & French) and English-only signs shows that 41% of signs at ETH are in English, but English signs make up 36% (combining English only and bilingual signs) of the signs at LiU. This further implies that there are more bilingual signs (27.9%) at ETH than at Linköping University (12.6%).

With respect to the language requirements at these two universities which were discussed in chapter 3, it is implied that all the students at LiU should know English no matter what their mother tongue and level of education is. On the other hand, master students especially the international ones do not necessarily know Swedish. The case in Switzerland is different: depending on the level of education and the language of instruction, students should know either German or English, but not necessarily both.

There are discrepancies in the use of English at these two universities. While more students at Linköping University are required to know English than at ETH, fewer signs at LiU are in English. This may be because of the large number of international students at ETH, which is far more than that of LiU. As mentioned earlier, of all the students who registered at ETH in 2010, 40.1% were international students from 80 different countries of the world, and out of all international students, 48.9% were from German-speaking countries (ETH Zürich annual report 2010: 48). This figure alone shows the extremely international environment of ETH

and the need for English on signs as a lingua franca along with German, since German is also used to address international students (from Germany and Austria).

It is worth stating that this study covers the linguistic landscape of particular areas at Linköping University and ETH. All the above results and the findings that follow are not representative of all the universities in Switzerland and Sweden. Neither are they representative of the general LL in these two countries; they are only representative of the mentioned areas at ETH and Linköping University. In other words, this study deals with a contrastive view of LL in more multilingual settings of Linköping University and ETH. It further tries to relate LL results to the language policies at these two universities and investigates how the policies are practiced.

5.2   Types of Multilingual Signs

In this part the status of English on bilingual signs is examined. The value of English in comparison with that of German or Swedish is studied as well.

As mentioned earlier in chapter two (p. 10), Reh (2004) has distinguished between four types of multilingual writing: complementary, duplicating, fragmentary and overlapping. Here the analysis of bilingual signs is presented according to Reh's arrangement. However, as discussed before, it is not easy to make a distinction between Reh's fragmentary and overlapping categories. Therefore, I haven't used any overlapping categories for my data.

Figs 5.2 and 5.3 illustrate the kinds of bilingual signs at LiU and ETH. It should be noted that the multilingual signs in this study are all bilingual signs in either Swedish-English or German-English with only 2 cases being French-German and 1 sign French-English. This classification shows the value of languages, particularly English, in the academic domain. It further shows whether English is treated the same as Swedish or German.
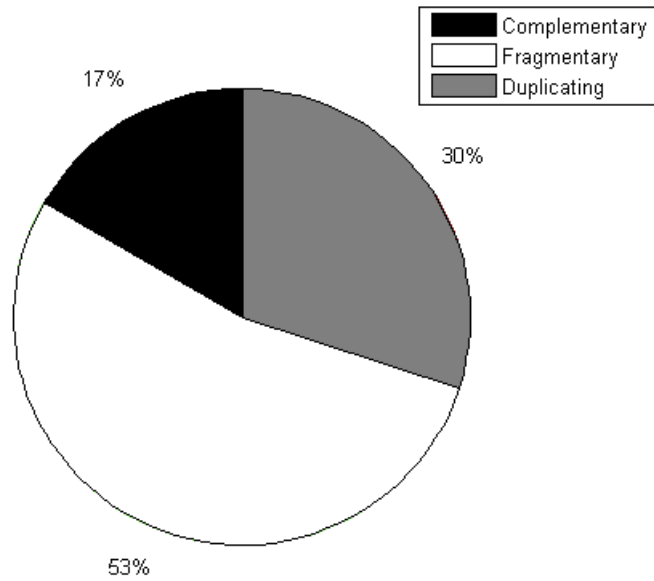
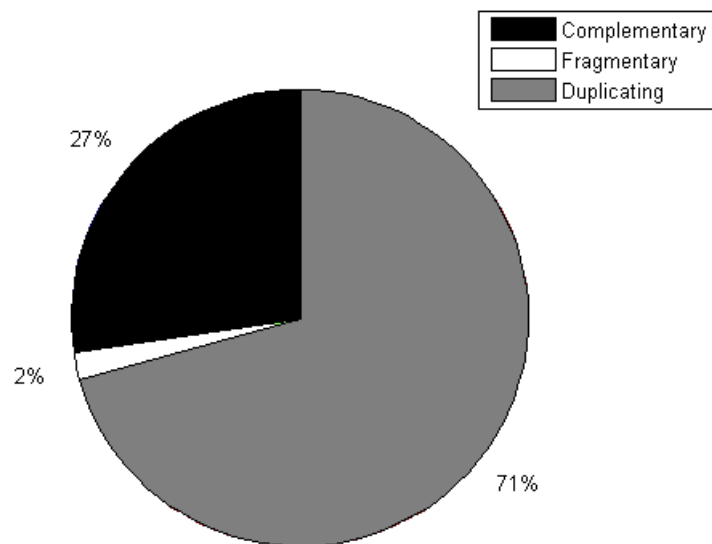**Fig. 5.2 The multilingual patterns of signs at LiU**

Fig. 5.3 The multilingual patterns of signs at ETH

Comparing the two figures yields interesting findings. While the majority of bilingual signs (53%) at LiU are fragmentary, only two signs at ETH are fragmentary. By investigating all the fragmentary signs, I realized that the information at LiU is mostly written in Swedish with some parts being translated into English. In fact, all the signs in fragmentary writing were the signs on dustbins. As an example see fig. 5.4 which is a sign on a dustbin at LiU with only the subject in English whereas the rest of information is in Swedish only. Combustible waste is the translation of *brännbart avfall*. But the text at the bottom of the sign which describes exactly what constitutes combustible waste is only in Swedish.

The presence of more fragmentary signs than other types of bilingual writings implies that English does not have the same value as Swedish at LiU, and as Reh claims "texts in fragmentary and overlapping multilingualism reflect a hierarchy of languages and the knowledge of languages among the target readership, since the type and amount of information obtainable in the languages used differ" (2004: 28). This is clearly seen in fig. 5.4.

Fig. 5.4 A bilingual sign in fragmentary writing

Duplicating signs constitute 70 per cent of bilingual signs at ETH while they are much less present at LiU (30%). It seems that ETH tends to have bilingual signs which carry the same amount of information in German and English. In other words, English has the same value as German. For example, see fig. 5.5 which includes the same text in two languages. However it should be mentioned that in all the bilingual signs observed at ETH, the German text is on the left, and the English translation is on the right. Considering the left to right Latin script, German has the dominant position.
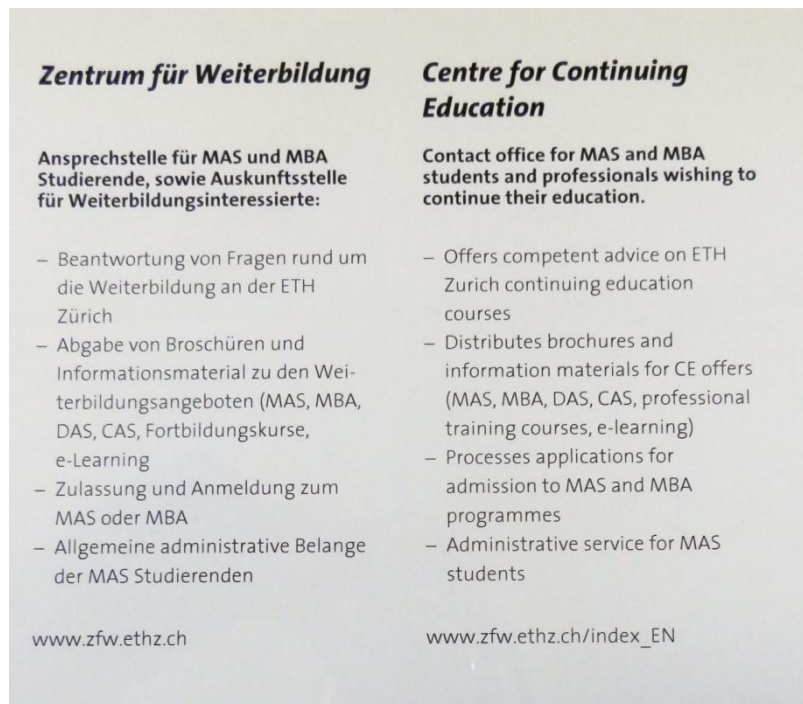
Fig. 5.5 A bilingual sign in duplicating writing

The last type of multilingual signs observed at the two universities is complementary. More complementary signs are present at ETH (27%) than at LiU (17%). This requires the readers to have a knowledge of both languages to comprehend the whole meaning of the texts, and as Reh asserts by using complementary multilingualism, it is assumed that multilingual individuals are the target readers since readers who have a knowledge of only one of the languages used in the writing would not comprehend the whole meaning of the text (2004: 28).

The use of English on these signs has different functions. Scollon and Scollon distinguish between symbolic and indexical functions of bilingual signs. They claim that languages on signs either index the community to which they belong or "symbolise something about the product or business which has nothing to do with the place in which it is located" (2003: 119). See, for example, fig. 5.6 which is a complementary sign in English and German. The whole information is in German, but there is a two-word-phrase in English (continuum movement). It seems that English on this sign symbolises foreign and mysterious taste.

Fig. 5.6 A bilingual sign in complementary writing

5.3   Distribution of Languages in Various Areas

The figures below (5.7 and 5.8) show the distribution of languages in different areas at ETH and LiU. Each area (1, 2, 3) will be analysed separately. These areas have been presented in chapter 4, table 4.1. The figures highlight the differences in the use of languages (particularly English) between the two universities. It further seeks to examine whether the areas under study follow the same patterns regarding the distribution of languages.
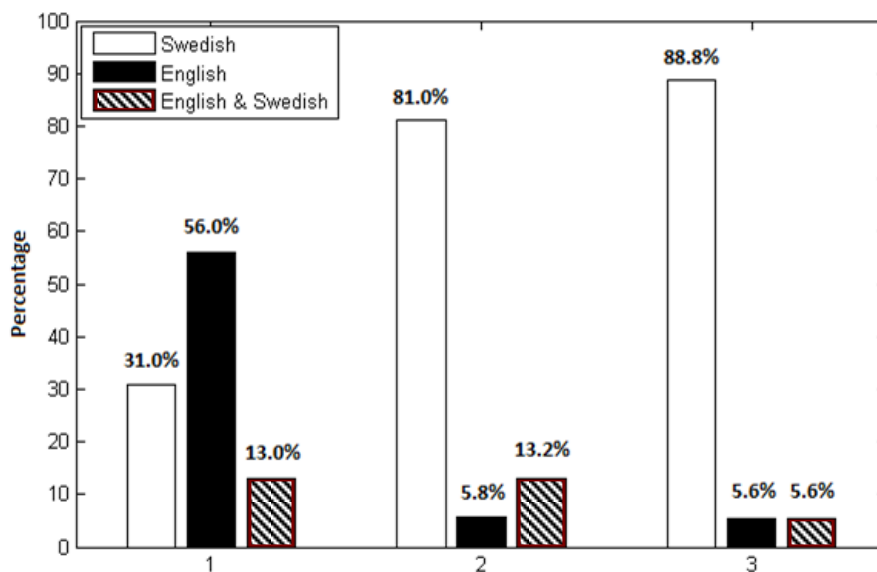
Fig. 5.7 Distribution of languages in different areas at LiU (1. International corner, International/Exchange office, areas around international offices including library entrance; 2. Postings that belong to student organizations in the C Building, student organization offices in Kårallen Building; 3. Students' notices in A Building)
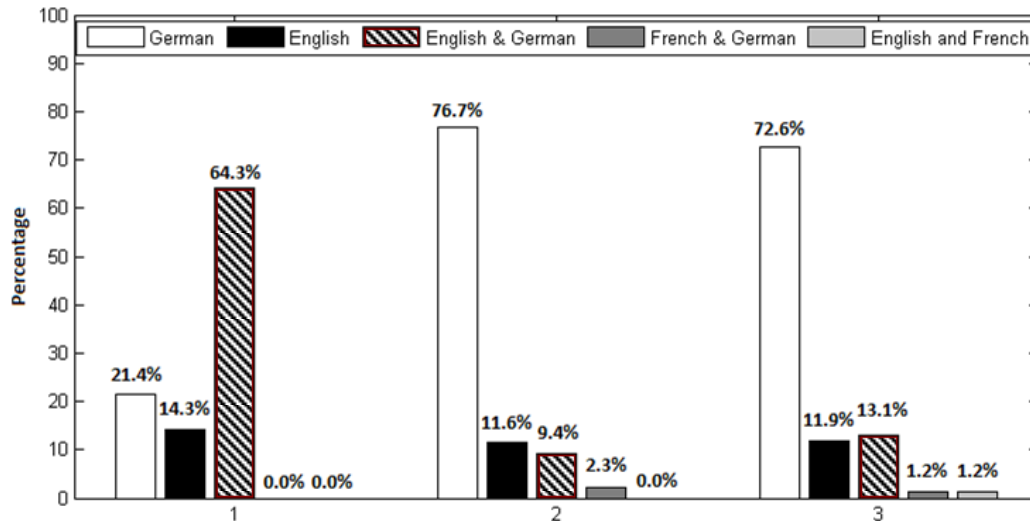
Fig. 5.8 Distribution of languages in different areas at ETH (1. International/Exchange office, areas around library entrance; 2. Student organization offices and postings on the noticeboards around them in CAB Building; 3. Students' notices in the university main entrance)

5.3.1 International Offices

English is mostly observed in international offices and areas around them. That is obviously because English as a lingua franca serves international students at the international office. In other words, international offices are exclusively designed to serve international students. Yet, this does not mean that English is not present in other areas, which will be discussed below.

Area 1 in fig. 5.7 and fig. 5.8 covers the international areas at both universities. While the majority of signs at LiU (56%) are monolingual (in English), only 14% of signs at ETH are monolingual (English). On the other hand, it is bilingual signage at ETH which has the dominant position (64.3%) while bilingual signs constitute only 13 per cent of the signs at LiU. This means that ETH addresses international students by posting bilingual signs; whereas LiU addresses international students by the use of English-only signs.

As a result of the function of this area, one may expect all the signs to be either multilingual or in English, but interestingly about 30 percent of signs at LiU and 21 percent of signs at ETH are only in Swedish and German, respectively. However, as it was mentioned above, about half of international students at ETH are German-speakers, which explains the use of German on the signs in the international office.

5.3.2 Student Organizations

An interesting finding about student organization postings is the high presence of national languages on the noticeboards at both universities. It seems that these signs address mostly German-speaking students at ETH, or Swedish-speaking students at LiU. Undergraduate programmes at both universities are taught in the national languages, and students in undergraduate programmes are required to know the national languages. On the other hand, the number of undergraduate students at both universities is far more than master and doctorate students. At LiU 76% of the students are on undergraduate level (Linköping University 2012), and at ETH 50% of students study Bachelor programmes (ETH Zürich 2011); this may be one of the reasons for the vast use of Swedish or German on student organizations noticeboards. It should however, be noted that students from Germany and Austria constitute the highest number of international students at ETH. 43.1% of international students are from Germany, and 5.8% are from Austria (ETH Zürich 2011). Therefore, it makes sense to have more signs in German at student organization offices at ETH because of having more German-speaking addressees. The pattern of English and bilingual signs at student organization offices is exactly the opposite to that of international offices. There are more bilingual signs at LiU in this area than at ETH. In contrast, the number of English signs at ETH is more than that of LiU.

There are however organizations at both universities exclusively for international students such as ESN (Erasmus Student Network), and all the signs at the door of these offices are in English only.

5.3.3 Students' Notices

It is clearly visible in the figures 5.7 and 5.8 that the majority of signs on students' noticeboards are in the official languages of each university. However, there are more English and bilingual signs at ETH (27.4%) than at LiU (11.2%). One reason is the more multicultural nature of ETH and having more addressees who use English as a lingua franca.

Before going on to further analysis, a definition for the types of categories mentioned in the previous chapter will be presented.

5.4 Definitions of the Categories

In the previous chapter, I mentioned how I organized the signs into six categories (see table 4.2 in Chapter 4). Here I will add a definition for each category as well as exemplifying typical signs. The examples will contribute to the understanding of the nature of each category.

The first category I determine is advertisements, which encompass any type of formal and informal commercial signs, announcements and signs with the aim of persuasion produced by students, companies or the university. See figure 5.9, which shows a set of advertising signs. In all the examples provided here, the top row signs are taken in Linköping and the bottom ones taken in Zürich.

Fig. 5.9 Different types of advertising signs

The second category is information, which includes any informative postings which can be in different forms, such as what is information (e.g. what is Erasmus student network?), time and place of lectures, introducing special people and the like (see figure 5.10 for concrete exemplification).
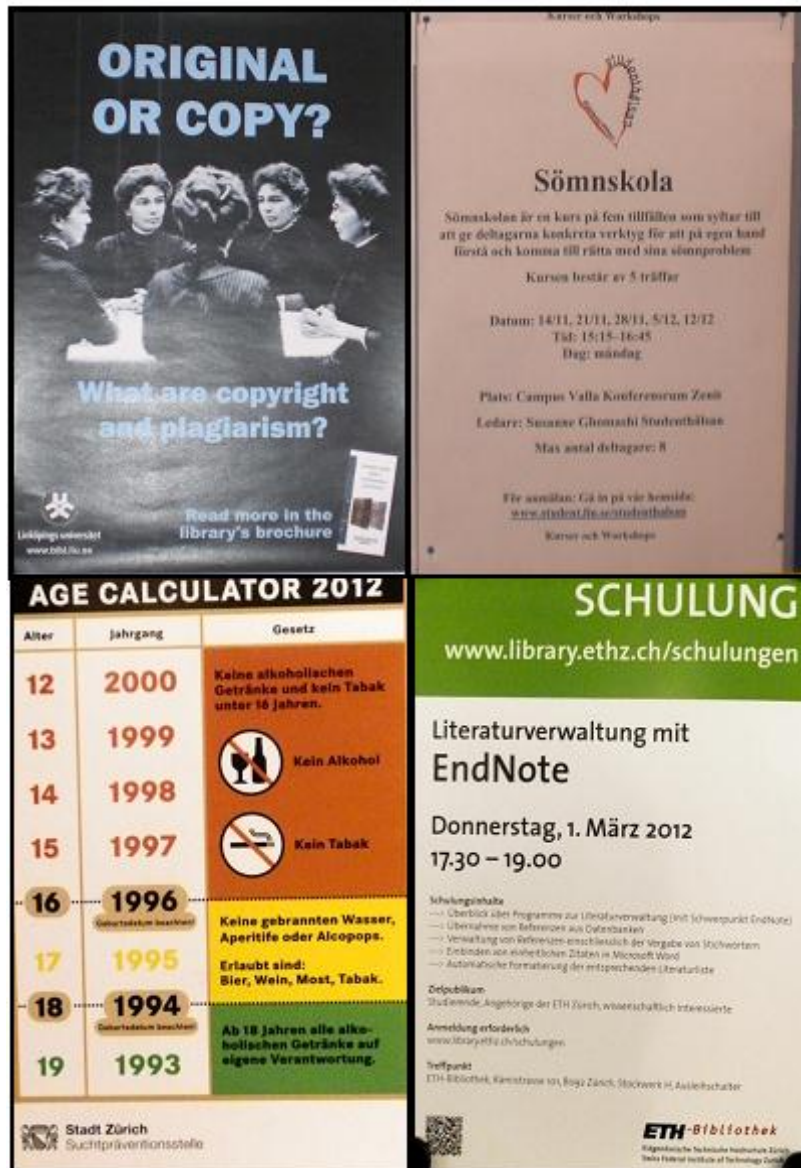

Fig. 5.10 Informative signs

Instructions are the third division of signs. Any written sign that tells the reader what to do or where to go comprises instructive signs; examples include: application forms, how to use a photocopying machine and where to throw away waste for recycling (see fig. 5.11).

Fig. 5.11 Instructions

The next category is services which includes all kinds of student services offered by the university or other organizations, particularly health care, career and chaplaincy services (see fig. 5.12).
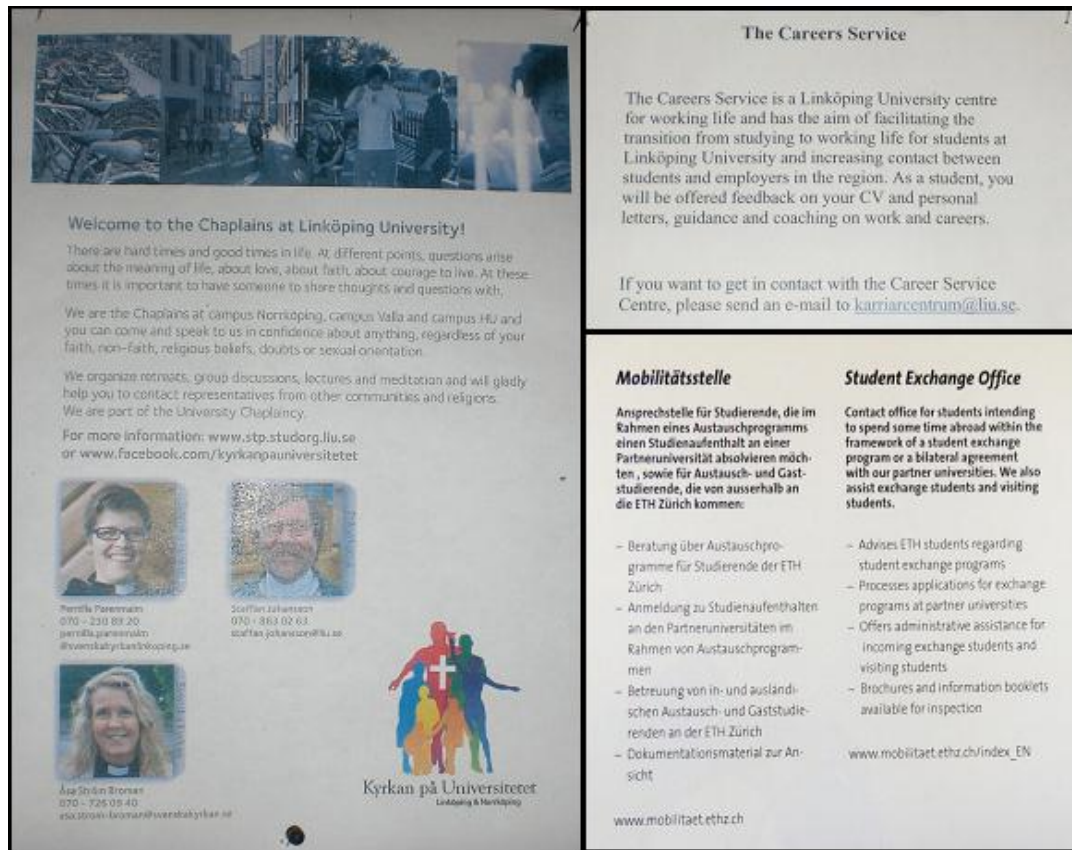
Fig. 5.12 services (the left and top-right photos are taken in Linköping, and the right-bottom one is taken in Zürich)

Signs are another category which includes building signage, direction signs and warning notices and prohibitions. Here, I use Backhaus' definition for signs. According to Backhaus, signs are used to "disseminate messages of general public interest, such as topographic information, directions, warnings, etc" (2007: 5). As an illustration, see figure 5.13.

Fig. 5.13 Different types of signs

The last category is jokes, which includes students' joke postings. Of all the data sampled in Linköping University and ETH Zürich, only two signs fit into this category. However, I had to define this small category because the two signs (see fig. 5.14) were not similar to any other signs in my data, and did not fall into other categories.
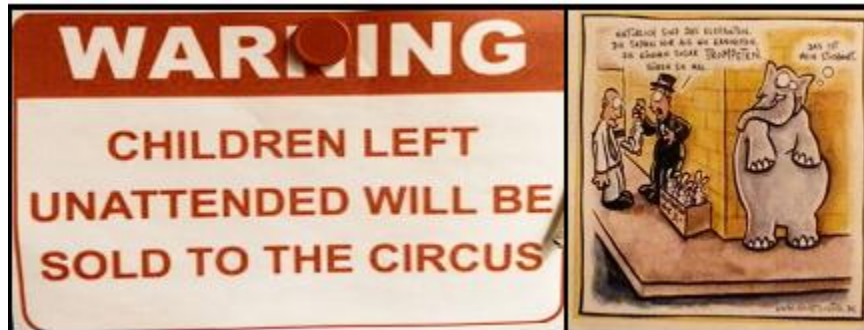
Fig. 5.14 Jokes (both taken in Zürich)

5.5 Analysis of Categories

Having defined the categories, now is the time to analyse them. This part aims to show how different languages are distributed in the different categories and the possible reasons behind these languages patterns.

Figures 5.15 and 5.16 show the number of tokens seen in different languages in various categories. Interesting results are inferred by comparing the two figures. Advertisements, information and signs have fairly similar patterns at both universities, whereas services show a totally different language pattern.

Official languages make up the majority of tokens in the advertisement category. In other words, 76.1% of advertising signs at LiU are in Swedish. This percentage is 71.8 at ETH. English-only signs and bilingual English-German or English-Swedish tokens are also present in this category. The interesting point is that the few signs (3 items) in French at ETH are all advertising signs. As advertising signs have a commercial aspect, the high availability of Swedish and German signs implies that the major customers are either the local ones, or the ones who speak Swedish and German at Linköping University and ETH, respectively.

Fig. 5.15 Distribution of languages in different categories at LiU

Fig. 5.16 Distribution of languages in different categories at ETH

In informative signs, again the official languages constitute the majority. 53.6% of items at LiU and 52.6% of signs at ETH are in Swedish and German, respectively. English-only signs

48

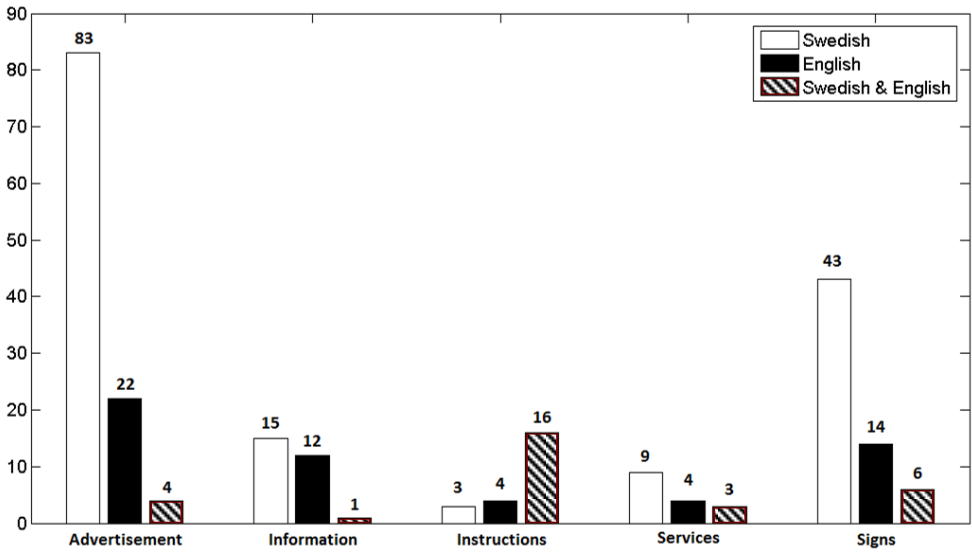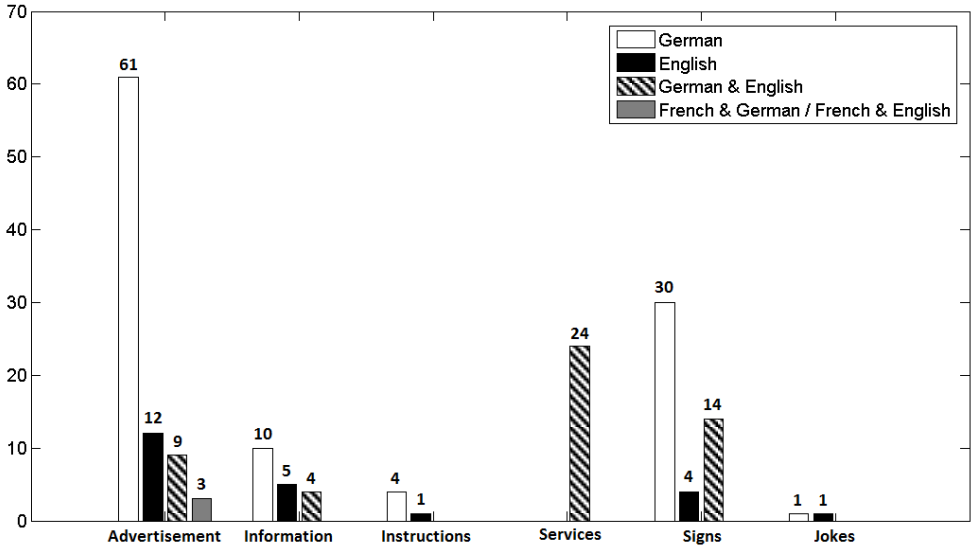come next, and then English-Swedish at LiU and English-German at ETH are the smallest category of informative signs. The interesting point is that there is only one bilingual (English & Swedish) sign at LiU whereas 12 signs are English-only. At ETH 5 signs are in English and 4 signs bilingual English & German. Although the pattern of English-only and bilingual signs at the two universities varies, the total percentage of presence of English on informative signs is similar.That is to say, English is present on 46.4% of signs (combining English-only and Swedish-English signs) at LiU and 47.4% of signs (combining German-only and German-English signs) at ETH.

The striking contrast is the non-availablity of bilingual (English &German) signs at ETH in the instructions category, whereas about 70% of signs at Linköping University are bilngual (English & Swedish). On the other hand, at Linköping University more instructive signs are in English than in Swedish. But at ETH the number of instructive German signs are more than English signs.

The most significant result of this section belongs to the services category. While different language patterns are seen in the services category at Linköping University, only bilingual English &German signs constitute the services category at ETH. This is the direct influence of the new language policy already noted in chapter three, that information about the services provided by the university should be in both German and English (ETH Zürich 2011).

The signs category is the last to be compared between the two universities. In contrast to what one may expect of directive and building signs, that they should be in English to guide international students in the buildings at universities, the majority of signs at both universities are in the official languages (68.3% Swedish signs at LiU and 62.5% German signs at ETH). However, bilingual (English & German) signs are more visible at ETH than at Linköping University. It should be mentioned that all safety regulations such as evacuation plan in case of fire, are bilingual at both universities. Both universities have only 4 directive signs in only English.

Jokes are a small category with only two tokens which were visible only at ETH. One of the jokes was in German and the other one in English.

5.6   Analysis of Top-down and Bottom-up Signs

In this part the analysis of top-down and bottom-up signs will be carried out. The focus is to examine the language distribution of top-down and bottom-up domains, and to find out whether language policies are reflected in patterns of language use particularly in the top-down domain of the linguistic landscape.

Table 5.3 shows the representation of languages on top-down and bottom-up signs at Linköping University. First, it should be noted that the total number of top-down signs at Linköping University is 50.2%. In other words about half of the signs are top-down, and the other half are bottom-up. This may depict a democratic situation where both students and university personnel have the same right in putting up their signs. However, as stated in chapter 3, the authorities at LiU control the choice of language on signs. Therefore, while bottom-up signs are said to be "designed much freely" (Ben-Rafael 2009: 49), it is not the case in the academic domain. On the other hand, authorities claim that they control the content and language of signs at LiU, but student organizations work independently and they decide themselves what to write in their posters.

Table 5.3 Distribution of top-down and bottom-up signs at Linköping University

Top -down	50.21% (120) of total signs	Swedish only	49.1% (59)	% (numbers) of all top-down signs
		English only	29.1% (35)	
		English and Swedish	21.6% (26)	
Bottom-up	49.79% (119) of total signs	Swedish only	78.9% (94)	% (numbers) of all bottom-up signs
		English only	17.6% (21)	
		English and Swedish	3.3% (4)	

Table 5.4. displays language representation in these two domains at ETH. The number of top-down signs is close to that of Linköping University i.e. 41.5% of all the signs. At ETH too, depending on the area in which the sign is located, bottom-up signs are controlled by the university authorities, mainly by the Corporate Communications office. However, the signs at student organizations offices and the ones put up at the two noticeboards at the main entrance work independently, and are not controlled regarding the content and choice of language. Students are free to post their signs in these areas.

Table 5.4 Distribution of top-down and bottom-up signs at ETH

Top-down	41.5% (76) of total signs	German only	34.2% (26)	% (numbers) of all top-down signs
		English only	11.8% (9)	
		English and German	53.9% (41)	
Bottom-up	58.5% (107) of total signs	German only	74.8% (80)	% (numbers) of all -up bottom signs
		English only	13.1% (14)	
		English and German	9.3% (10)	
		French and German	1.9% (2)	
		French and English	0.9% (1)	

The second point to be discussed here is the language representation in these two categories. As is obvious from table 5.3, Swedish emerges with the highest dominance (49.1%) in top-down signs. In *Language policy: hidden agendas and new approaches,* Shohamy states that the top-down items as an expression of official policy reflect the status of languages as official languages, and they further show "who is in charge" (2006: 122). Extending Shohamy's claim to my study, it is concluded that Swedish apart from being an official language, is also practiced as the dominant language. In other words, Swedish is the first choice at LiU. This is most obvious in fig. 5.17, which shows a set of directive signs at LiU. Interestingly all the directive signs except the ones at the international office are in Swedish. On bottom-up signs Swedish also appears as the dominant language (78.9%). It is interpreted that both the language policy which is expressed through top-down signs and the language policy implementation follow the same patterns. In other words, language policy is also reflected in bottom-up signs.

Fig. 5.17 A set of directive signs at Linköping University

At ETH the situation is completely different. A large proportion of top-down signs (53.9%) are bilingual English and German, but in bottom-up signs English only and English-German signs appear on only 22.4% of the signs. This difference clearly illustrates the preference of different actors in choosing the language. Top-down signs aim to address both local and international students, and this is achieved by the use of English-German bilingual signs. On the other hand, bottom-up signs are written more freely (in student organizations, and the two noticeboards at the main entrance), and as their writers do not have to obey any rules in the choice of language, no stable pattern of language-choice is found. Top-down signs at ETH indicate the language policies, but bottom-up signs show how or whether the policy is implemented (or not).

6. Discussion and Conclusions

This study has contributed to the study of linguistic landscape and its relation to language policy at two different universities in two different countries, each with a different language policy. In terms of the linguistic landscape, the study shows the number and variety of visible languages at both universities, identifies different types of bilingual signs, examines the status of English on bilingual signs, assesses the distribution of languages in different areas of study, defines a taxonomy for different signs, analyses how different languages are distributed in different categories, and examines how top-down and bottom-up signs are distributed. The results show that there are similarities in the use of languages (Swedish and English at Linköping University, German and English at ETH Zürich), but differences in the number of signs used. Some of the most significant findings are summarised here and in table 6.1:

(1) The only visible languages in the linguistic landscape of Linköping University are Swedish and English. At ETH, the dominant languages are German and English with the presence of few French signs.

(2) At both universities, the national languages (Swedish at LiU and German at ETH) are dominant.

(3) There are more English and bilingual signs at ETH Zürich than at LiU. On the other hand, more English and Swedish monolingual signs are visible at Linköping University.

(4) English is mostly observed in international offices and areas around them. At international offices, ETH addresses international students by posting bilingual signs; whereas LiU addresses international students by the use of English-only signs.

(5) In student organization offices at both universities, the use of national languages is far more than the use of English.

(6) Personal notices on students' noticeboards are mainly in national languages at both universities. However, English is more visible on students' noticeboards at ETH than at Linköping University.

(7) Language policies are reflected in top-down signs more visibly than in bottom-up signs.

Table 6.1 Summary of major findings

Dominant points	LiU	ETH
language	Swedish (64%)	German (57.9%)
types of multilingual signs	fragmentary	duplicating
category	advertisements	advertisements
language in top-down signs	Swedish	English and German
language in bottom-up signs	Swedish	German

In terms of language policy, different mechanisms of the linguistic landscape are discussed. When certain languages are selected as the medium of instruction, they are imposed as part of language policy. This is the case at both Linköping University and ETH. Both universities have their official languages as the only language of instruction in undergraduate studies. This means that in order to be eligible for undergraduate studies, students must demonstrate language skills in Swedish at Linköping University and German at ETH. In other words, these languages are imposed on students who decide to study in undergraduate programmes, and those who do not know the language are rejected.

On the other hand, tests and particularly language tests are other factors in imposing policies. Tests are "used as the main mechanism for manipulating languages, and decision makers were totally aware of the effects of tests in imposing language policies" (Shohamy 2006: 94). At ETH, even students whose mother tongue is German have to take a German test to show their language skills. This is a strict rule that students should have language skills according to the criteria that the university authorities define. At Linköping University too, students should have a documented knowledge of Swedish. In general, language tests are powerful tools for imposing "what will be learned, how it will be learned […] and what the criteria for correctness will be" (Shohamy 2006: 105). At both universities, students should present proof of either English or national languages by sitting language tests, and this means imposing policies.

Apart from the national languages, English has a strong position at both universities. According to Cenoz and Gorter, academia is increasingly accepting more mobile students, and this emphasizes the use of English as the language of instruction (2012: 317). This is exactly the situation at ETH and LiU where the considerable use of English is to meet the

needs of large number of international students. Shohamy believes that English as the world's lingua franca is immersed in different domains such as academia, and this is part of language policy which imposes the learning of English in schools, and sometimes as the language of instruction. To enter universities nowadays, students should pass an English test. Given the power of tests, the power of English is reinforced (2006).

The Bologna process is another internationalizing force which requires English to be adopted in academia across Europe (Ferguson 2012: 476). As discussed before (in chapter 3), to be able to fulfil the aims of the Bologna process, English works as the language of interaction.

The high visibility of English at these universities, its use as a language of instruction in many master and PhD programmes, and having to provide proof of English tests, all confirm the widespread use of English in academia. The use of English as the only foreign language used at ETH and Linköping University indicates the priority of English over other languages. It should however be noted that at both universities, the dominant language is the national language (Swedish at LiU and German at ETH), and English has the second position. Ferguson maintains that some universities such as those in the Scandinavian context, have difficulty making a balance between the use of English and the national language. On the one hand, they do not want to ruin the university's research reputation in the international academic world. On the other hand, they want to preserve the use of their national language in higher education and research domains (2012: 492). I believe this situation is clearly seen at ETH and Linköping University where university authorities strive to make use of their national language along with English to the extent that English would not always be the first choice.

A final point to make about language policy is that no exact answer can be given to the question of what the language policy of a country is (Spolsky 2004: 39). This applies to universities too. The presence of students and staff with extremely different backgrounds, the use of different languages for communication, the availability of various books in different languages and even the similarities between certain languages such as having similar or equal words all indicate that a special policy is impossible to implement. On the other hand, different parts at a university work independently, so each part has its own policy, and defining a unified policy is not possible.

6.1   Suggestions for Future Studies

The study of the linguistic landscape is broad, and. as regards my study, various points can be discussed which go beyond the scope of this work. Points such as the order of appearance of languages on signs, placement of text (left, right, up, down, and margin), font type, font size, and colour are options. As Barni and Bagna note, the notion of who produced the text for whom and what its intended function may also be considered in the study of LL (2009: 133). It may also be useful to focus on what happens behind the scenes, and what makes a sign writer create an item in a certain way (Hult 2009: 94).

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