# Academic Language Barriers and Language Freedom 

Laura Gabriela García Landa<br>Centro de Enseñanza de Lenguas Extranjeras (CELE), Universidad Nacional Autónoma de México


#### Abstract

The ability to access a foreign language can be an issue for academics trying to publish in international journals. The barriers that non-(limited)English-speaking academics in poor countries have in accessing the academic literature pose an issue of disadvantage in a world where the current trend is to publish research work mostly in English. This case study examines these issues of disadvantage through a discussion of the problems faced by researchers and full-time teachers from humanistic and nonhumanistic faculties, schools, centres and institutes at the National Autonomous University of Mexico who were asked what languages they used in their academic activities and in what domains, and what their language problems were and how they had solved them thus far.


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## Introduction

It appears that the use of English in the academic domain has gained an important place in the lives of academics. At least, that is the tendency reported by political speeches in international contexts for and by academics, employers, parents and ministries of education, based on data related to English language use collected by, for example, Graddol (1997); Graddol and Meinhof (1999) and McConnell and Ruberge (1994), in studies dating from the eighties to the present. However, as reported by Tonkin (2003) and Ammon (this volume), in most cases these figures are more a prediction than a fact documented by research studies. The present study seeks to fill this gap by defining more clearly to what extent English is a crucial factor in the success or failure of academics in Mexico to carry out their academic activities. It also looks at whether a balanced use of languages at the academic level, for cultural enrichment and for the freedom to express knowledge in the language of their choice, would contribute to their overall academic development.

The purpose of the present paper is to provide a case study that examines the extent of the language barrier faced by non- or limited English-speaking academics in poor countries. It highlights the issues that some academics at the National Autonomous University of Mexico face when trying to access the academic communication network, and specifically what languages they use, what language barriers they face and how their language ends have been catered for. It provides a contrasting study to Baldauf (2001), who examined the limited non-English language publication patterns found at an English-speaking
university. Based on the findings of the study, some suggestions are made about how the disadvantages found could be ameliorated.

## Language barriers

The issue of academic language barriers has been well documented in recent decades. McCleary (1982) has pointed out the extra burden that Third World scientists faced in what he then perceived as the current uneven situation where articles published in French, German and Russian were restricted to local journals in comparison with those published in English, which were abstracted in databases or cited internationally. It seems that this situation has been intensified since then (see Ammon, 2001 for examples).

Another study (Baldauf \& Jernudd, 1983) looked at the languages used by Scandinavian psychologists to publish their research findings. They found out that they published them mainly in English to assure scientific communication with their colleagues internationally. In a subsequent study, Jernudd and Baldauf (1987) tried to find out general processes of communication among Scandinavian psychologists in order to understand and motivate human resource development in specific scientific situations. The results suggested that language choice was actually a barrier to communication in science, which limited participation by members of smaller language groups. Psychologists reported depression when confronting their shortcomings in foreign languages as well as disregard for their work which was published in Swedish. Questions have arisen as to whether English should be 'the natural language of communication' (Jernudd \& Baldauf, 1987: 149; O'Driscoll, 2001). It was found that Scandinavian psychologists have three choices if they want to pursue an international presence: to publish in a well-known Scandinavian journal with articles in English, to publish in international journals outside Scandinavia or to publish in collaboration with a colleague who possesses the required language skills.

According to these authors, to improve the communication process among scientists, it is necessary to understand the process by which scientists make choices. The identification of language correction procedures precedes the possibility of effective information exchange.

The authors proposed a general model divided into: type of community in which the scientist lives (How does its communicative system work? What is the degree of development of the endogenous language?), the institutional and the network constraints that limit the scientists' communicative selections or domains of action (writing, speaking) to comply with the requirements of scientific communication for individuals (Jernudd \& Baldauf, 1987: 164). The issues raised in this model help to clarify the exposition of both the framework and the data found in this study.

## The Sociolinguistic Type of the Language Community

The sociolinguistic type determines dominant language selection in local, (normally) national and (sometimes) regional institutions, based on the conditions of the communication system in the society at large. It determines what languages individuals normally acquire in their life cycle and what languages they normally use. (Jernudd \& Baldauf, 1987: 165)

Sociolinguistic type can also be applied to more focused communities, including the university site for this study, a city in its own right of 300,000 students. Although the National Autonomous University of Mexico (UNAM) (founded in 1553) was conceived as a multiracial and multiethnic university, accepting all kinds of students regardless of their racial or ethnic backgrounds, it was not until 1968 that the university became a mass university, accepting people from all kinds of social and economic backgrounds. Interestingly, reviewing the pre-university programmes from 1867 to 1990 (Velázquez, 1992) shows that the languages taught at the time were English and German in 1867; English and French from 1869 to 1923 (except in 1918); English, French and German in 1918; French, English, Italian and German from 1920 up to 1990, except for 1923. Students were required to acquire a basic knowledge of these languages since it was considered of importance to those who would pursue either a technical career or an academic one at the university (Velázquez, 1992). The language centre of the university was created in 1966 with the purpose of ameliorating the academic and administrative inefficiency of foreign language courses which, at the time, were imparted in different university locations, as well as establishing efficient and uniform educational systems. Moreover, there was interest in expanding the range of 'living languages' taught (Marrón, 2001).

The first courses offered in the language centre were basically reading comprehension courses, whose objective was to provide students with the necessary skills to be able to read specialised literature in the language of origin. Little by little, the perspective of the educational approach of the centre changed its emphasis to four-skill communicative development. In the last decade a broader variety of languages have been available for study at the Centre of Foreign Languages at the University ${ }^{1}$, but at the same time more faculties have demanded English as a requirement for getting a bachelors degree.

## The institutional constraints

Institutions in a particular field of science act as determinants of language selection and use. They serve as foci for behavior towards ways of communicating, e.g. through formulation of policy, thus constraining selection of language. Institutions can be defined as meetings, organisations, research facilities, schools, journals, citation indices, databases, etc. (Jernudd \& Baldauf, 1987: 167)

Institutions 'set the terms' for communication both linguistically and culturally. In the case of $U N A M$, it has numerous academic agreements with universities worldwide, enhanced by contacts that professors and researchers, interested in integrating themselves to academic communities, have created and promoted through the years. Many of them have been granted scholarships to do either graduate or postgraduate studies in foreign countries, and this has enriched the multilingual and multicultural diversity of the offerings at the university. This has been important for the learning of languages in several ways, since some of the languages have been given a greater political and academic support than others. Usually scholarships have been offered by English, German and French universities which have adopted a strong language policy world wide, including taking students from other universities (commonly future academics). More
recently, countries such as Portugal, Romania, China, Italy and Russia have initiated moves to promote their official languages at the university, offering scholarships for study at their universities, thereby initiating interest in the learning of these languages. Of great importance as well have been the professors, researchers and students who have come to the different faculties, centres, institutes and schools of the university as students, teachers and researchers, some of whom have decided to stay in Mexico. All these facts highlight the linguistic and cultural dynamic that surrounds the environment of academics at this particular university. ${ }^{2}$

## The network influences

Network influences are determined by how efficiently information flows from all the potential participants in the communication network. These are a result of shared media of communication in terms of language, discourse or terminology, as well as institutional structures, that support 'vertical communication' among participants (Jernudd \& Baldauf, 1987: 169). Academics at the UNAM usually have access to several communication networks such as participation in seminars and congresses, as well as writing articles and books in both national and international circles. However, a particular problem is the actual distribution of the books published by the university's publishing house, which is inefficient. Even if publications reach international readers, they are hardly ever promoted, and their English counterparts are preferred by potential readers. Usually monolingual researchers find their own networks within the Spanishspeaking community. Nonetheless, the problem of vertical participation is always an issue due to the lack of institutional frameworks to support them.

## The Domains of Science Communication

Currently the pressure dictated by the special characteristics of the communication networks, on the one hand, and individual future prospects, on the other, moves professionals away from working with their own societies, which results in a conflicting way of communication among participants in the communication network. Thus, it is important that local alternatives are proposed for the availability of educational materials that comply with both the linguistic and cultural demands of scientific and non-scientific communities, enhancing the creation of communication links in the different domains of participants' interaction. Institutions are in a position to set the terms for this to happen (Jernudd \& Baldauf, 1987: 168-9).

The institutional constraints at the UNAM, the site of this study, vary depending on the domain, that is, there are meetings at the university council level that demand some knowledge of local protocols for participants to be able to lead a session. Academically though, UNAM has adopted international standards in what is called the SNI (Sistema Nacional de Investigadores: National System of Researchers). Researchers are valued for their academic production in refereed international journals, participation (as invited speakers or lead speakers) at national and international conferences, as well as for demonstrating their capacity to obtain grants to carry out international projects that involve close contact with colleagues through the use of other languages. Yet, local reports, articles and books are written in Spanish as well, as part of the everyday activities of full-time teachers and researchers. Classes, seminars and workshops are all
expected to be conducted in Spanish, using the specific disciplinary style that characterises each of the academic areas. However, particular schools, centres, institutes and faculties can always have invited speakers for conferences, seminars, courses or workshops taught in a foreign language (some provide simultaneous translation into Spanish and others do not). Excluding the faculty of modern languages, all regular classes are in Spanish.

Needless to say, academics need to comply with the international academic standards if their desire is to belong to a given research network or networks and to share their research findings with them. At this point it is important to mention that this is something that, as will be seen, only few of the teachers and researchers can actually attain. Even if some of them are able to publish their articles locally, they are not read widely either nationally or internationally. Most of the journals and books edited and published by the university are very poorly distributed and promoted even locally, let alone internationally. Under these conditions, articles that are written to be published do not make fruitful contributions to academic discourse, to the work of other colleagues or the general public. Researchers usually try to bridge this gap by giving conference papers, seminars or courses, locally or in international forums open to Spanish speakers.

Yet language ability becomes an issue when confronted with presenting in a foreign language. Foreign languages are usually learned at a very basic level at the high school. The university provides four-skills courses but apart from reading comprehension for university students, basically no other English for Specific Purposes (ESO) courses are provided. ${ }^{3}$ For most, this would not provide adequate skills to fully participate in various academic communication networks.

## The individual opportunities

Individual opportunities are constrained by a myriad of particularities. Actual occasions (study, work, pleasure) to become proficient in either local and/or international languages might be a reason to choose to learn a given language. The particular ideology a person has in relation to learning a language or several languages can be another factor in choosing a language, which might be connected as well with what the individual's academic, work or leisure community believes it would be appropriate to learn. At times, the choice of language will be determined by the specific interests of the speaker, either academic (grants, exchange opportunities, joining international organisations, integration in specific research networks, publishing in specific journals) or work-related (appointments abroad or in an international organisation). The particular status of a foreign or non-foreign language in the language community and the sources provided to the development of a specific discipline, as well as the availability of editing and translation services, could influence the users' particular choice of a language (Baldauf \& Jernudd, 1987; Jernudd \& Baldauf, 1987: 170-1).

Some academics have learned languages that have opened other perspectives to them within their own areas, which has enriched their work enormously. Others, however, have not had those opportunities and have limited themselves to having contact with those colleagues who speak Spanish, write in Spanish or have material translated into Spanish. This study will investigate whether this
has hindered them from having useful and enriching academic communication with Spanish-speaking colleagues or not.

Based on this analysis of the language use issue, in this study language barriers refer to the linguistic problems academics face in carrying out their academic duties at the university as professors and researchers. This communication includes teaching, participating in seminars and meetings, giving conferences talks, presentations and workshops, establishing contact with colleagues, either orally or in writing, and writing papers, articles and books.

## Academic Communication in Mexico

In this context and for this study, academic communication is seen as the privilege each academic has to actively participate in national and international forums to communicate his or her research findings. It is the freedom to write research articles in the language of his/her choice as well as the freedom to be read internationally by other colleagues in a language other than English. It also comprises their claim to be able to establish open interchange with their colleagues through the reading of the latters' articles and books written either in English or in any other language, as well as establishing the mechanisms to provide them with the resources they need to be able to do so.

Within these frameworks of language use and language rights as mediated by 'the model of the ecology of pressures' (Terborg, 1996, 1999, 2000; Terborg \& Ryan, 2002), it is important to find out what languages Mexican university academics choose to carry out their academic activities and then to establish local priorities. Although this topic has been touched upon in studies concerning the writing styles of Latin-American cultures (Del Rosal, 1997; Ventola, 1997), and some questions have been raised on the issue (García Landa, 2002, 2003; García Landa \& Terborg, 2003), the question regarding what languages university academics in the largest Mexican university use and for what purpose has not been examined. Neither has the topic related to what kinds of language barriers these academics usually face when trying to carry out their academic activities.

## Language use and domains

Domains are defined in terms of institutional contexts or socio-ecological co-occurrences. They attempt to designate the major clusters of interaction situations that occur in particular multilingual settings. Domains enable us to understand that language choice and topic (...) are (...) related to widespread socio-cultural norms and expectations. (Fishman, 1972: 19)

This study examines what languages are used in the following domains:

- formal domains (academic activities within the institution where the academic works); and
- informal domains (academic activities outside the institution where the academic works).


## The ecology of pressures model

'The ecology of pressures model' (Terborg, 1996, 1999, 2000; Terborg \& Ryan, 2002) helps to explain the results of this study more clearly. As explained above,
choosing a language entails ideological reasons, as well as economic, social and cultural pressures that lead inevitably to some sort of inequality (see, for example Terborg \& Ryan, 2002). ${ }^{4}$

One aspect of inequality that necessarily occurs is language shift in non-English-speaking research groups, which may be an aspect of language rights as well. We suppose that those speakers who suffer more pressure in a given situation, non-native speakers for example, are less powerful. Their action does not lead to a state of the world ${ }^{5}$ which will be completely favourable for them or the actual state of the world may make their action more difficult.

Competence appears to be the tool which contributes to being successful and this tool is part of the state of the world. That means that every community has certain rules and the knowledge of these rules and their proper application makes communication successful. However, competence is not always the only tool needed to achieve communication. Sometimes, the asymmetrical power relationship is such that even if academics are able to understand, speak, read or write in a language other than English, they will prefer publishing in English because they believe that in this way they will be able to interact with colleagues in the same field. Yet, writing in English does not mean that non-Eurocentric academic discourse will be considered valuable. There are factors that show that other collateral linguistic elements may lead to limited or non-participation of academics in the communication network (see, for example Al-Ansari, 2000; Flowerdew, 2000; Hoffmann, 2000, 2001; Hu, 2002; Kheimets \& Epstein, 2001; Large, 1983; Liu, 1999; Nelde, 2000; Nelson, 2001; Nero, 2000; Pakir, 1999; Rassool, 2000; Sano, 2002; Shi, 2002; Suarez, 2002; Warshauer, 2000).

## Methodology or Procedure

## Instrument

A carefully designed and piloted questionnaire was distributed to 600 teachers and researchers at one of the largest universities of Mexico over the 2002-2003 academic year; however, only 257 or $43 \%$ were returned. While the return rate was disappointing, it is better than the typical $20 \%$ return often obtained when using questionnaires. The questionnaire was circulated to fit in with the schedules of the teachers and researchers of each department with the purpose of not interfering with their everyday activities. A cover letter was sent to each of the randomly selected institutes, centres, faculties and schools of the university ${ }^{6}$ with a copy of the questionnaire, asking for permission to give out the questionnaire and explaining the purpose of the study. The questionnaires were administered to 30 full-time teachers and researchers at each of the 20 departments selected, according to their schedules and requirements, to meet the individual particularities in each of the centres. Some of the questionnaires were administered face-to-face in groups organised by the institution (Medicine School, Faculty of Political and Social Sciences), for others a list of e-mail addresses was provided and they were contacted electronically, others were administered in a personal cubicle in a face-to-face session. Others simply returned completed questionnaires. Only one of the faculties and a centre decided not to take part in the study - the reasons were not specified. These arrangements may have brought about variations and uneven administration, but it was important to
keep a non-intrusive environment to facilitate further contact with some of the participants. The data analysed for this study came from the Faculty of Philosophy (FFyL $n=36$ ), the Centre for Interdisciplinary Research in Sciences and Human Sciences (CICH $n=30$ ), The Faculty of Psychology (FP $n=28$ ), the Faculty of Medicine (FM $n=34$ ), the Institute of Economic Research (IIE $n=29$ ) and the Faculty of Administration ( $\mathrm{C} n=30$ ), and comprised 187 questionnaires. The other 70 questionnaires came from groups where 15 or fewer questionnaires (out of 30) were returned. These will be processed separately since the very much smaller group sizes could make group comparisons invalid.

The data were processed by faculty, centre, institute and school and then divided into three groups: (1) Social and Human Sciences, (2) Natural and Physical Sciences and (3) Administration Sciences. Answers to the questions were grouped accordingly, trying to match them with the main issues raised by the study: (1) language used in academic activities and domains, (2) language barriers and possible solutions.

## Research questions

The three research questions that were asked were:
(1) What were the languages that teachers and researchers used at the National Autonomous University of Mexico in their academic activities, and in what domains?
(2) Were there any language barriers when performing or interacting in their academic domains, and if so, what were they?
(3) What solutions had been found so far to overcome these barriers?

## Results

## Languages used in academic activities and their domains

This section sets out the data related to what languages are used in academic activities in the domains of: (1) Social and Human Sciences, (2) Medical Sciences, and (3) Administration Sciences. Activities and domains appear in Table 1 for the languages used in various activities and domains as reported by academics themselves. Only the languages mentioned by the interviewed academics are taken into consideration. They were asked the languages used at work for a particular set of academic activities. ${ }^{7}$

## Social and Human Sciences

From the 66 questionnaires returned from the Faculty of Philosophy and in the Centre of Interdisciplinary Research, Spanish (36\%), English (32\%) and French ( $32 \%$ ) are almost equally used for giving conference presentations. However, the use of English and French drops dramatically (4.5\%) for attending congresses, colloquia or participating in forums or seminars. That is carried out in Spanish by at least $17 \%$ of the academics in this area. It is more likely that academics who give conference papers in English, French or Spanish will attend events where these languages are used but none of the academics reported specifically on that. German, Italian and Portuguese are used by a small number of academics for these same academic activities.

Table 1 Languages used in academic activities by domains

| Domains | Spanish | English | French | German | Italian | Portuguese |
| :--- | ---: | ---: | :---: | :---: | :---: | :---: |
| Social and Human Sciences |  |  |  |  |  |  |
| 1. Giving conference papers | 24 | 21 | 21 | 2 | 2 | 0 |
| 2. Attending congresses, colloquia | 11 | 0 | 0 | 0 | 2 | 0 |
| 3. Participating in seminars, forums | 11 | 0 | 3 | 1 | 1 | 2 |
| Medical Sciences |  |  |  |  |  |  |
| 1. Giving conference papers | 27 | 25 | 2 | 0 | 0 | 0 |
| 2. Attending congresses, colloquia | 30 | 15 | 2 | 0 | 0 | 0 |
| 3. Participating in seminars, forums | 0 | 0 | 1 | 0 | 0 | 0 |
| Administration Sciences |  |  |  |  |  |  |
| 1. Giving conference papers | 18 | 8 | 3 | 0 | 0 | 1 |
| 2. Attending congresses, colloquia | 10 | 5 | 0 | 1 | 0 | 1 |
| 3. Participating in seminars, forums | 28 | 19 | 4 | 0 | 0 | 1 |
| Total |  |  |  |  |  |  |
| 1. Giving conference papers | 69 | 54 | 26 | 2 | 2 | 1 |
| 2. Attending congresses, colloquia | 51 | 20 | 2 | 1 | 2 | 1 |
| 3. Participating in seminars, forums | 39 | 19 | 8 | 1 | 1 | 3 |

## Medical Sciences

In the Faculty of Psychology and in the Faculty of Medicine, Spanish and English are widely used ( $n=62$ ), with $43 \%$ and $40 \%$ giving conference papers in each language. However, the use of Spanish goes slightly up to $48 \%$ when attending congresses whereas the use of English decreases to $24 \%$. French is used by a reduced number of researchers in both these formal domains (3\%). Neither German nor Italian nor Portuguese were reported as languages used for any of the domains in this area.

## Administration Sciences

In the Administration Sciences ( $n=59$ ), Spanish is used for giving conferences by $30 \%$ of the academics. English is less used in this domain (13\%). French and Portuguese are used by only a handful of participants. Very few of them attend congresses either in Spanish (17\%), English (8\%), German or Portuguese. However, participation in seminars seems to be a more widely attended activity with participation in Spanish (47\%), English (32\%), French (6.7\%) and Portuguese (1.6\%).

As we can see, the use of Spanish predominates in most of the domains followed by the use of English and French. However, the significance in the use of Spanish and English is minimal for the 'giving conferences' domain in Social and Human Sciences. In the area of Administration Sciences this activity is mostly carried out in Spanish. The panorama changes when asked about attending congresses and colloquia. The use of English diminishes considerably to almost $50 \%$ in each of the activities, except for the area of Social and Human Sciences, where none of the academics reported using English either for attending congresses or participating in seminars. The use of German, Italian and Portuguese are reported as less used languages in the three domains in Social and Human Sciences and in the Administration Sciences, whereas they were reported as not used in the area of Medical Sciences.

## Domains and language barriers

This section reports on the domains in which academics expressed having language barriers as well as the specific language skills where academics are having more difficulties to carrying out their academic activities.

As can be inferred from Table 2, the language presenting problems in most of the domains is English across the spectrum of Social and Human Sciences, the Medical Sciences and Administration Sciences. The domains with which academics are having most problems are: giving conference papers ( $21 \%$ ) ( $35 \%$ ) ( $49 \%$ ), writing articles ( $11 \%$ ) ( $42 \%$ ) ( $21.2 \%$ ), telephoning ( $10.6 \%$ ) ( $15.15 \%$ ) (13.63\%), having meetings ( $0 \%$ ) ( $0 \%$ ) ( $15.15 \%$ ) and sending letters ( $9.09 \%$ ) ( $15.15 \%$ ) ( $15.15 \%$ ). Giving conference papers remains the most important language barrier in at least three other languages: French (9\%), Portuguese and Italian $(1.5 \%)$. For a small group of academics in the Administration Sciences area, Portuguese is the only language barrier in most of the domains: giving conferences ( $6.6 \%$ ), meetings ( $1.5 \%$ ), writing articles (3\%), sending letters (3\%), telephoning (3\%), socialising (3\%) and negotiating (4.5\%). Italian is a language barrier for Social and Human Sciences in most of the domains for a small number of academics and in Administration Sciences in some of the domains (conferences ( $1.5 \%$ ), meetings ( $1.5 \%$ ), telephoning ( $1.5 \%$ ) and socialising ( $1.5 \%$ )). Zapotec was mentioned as being a problem for interviewing for an academic in

Table 2 Domains and language barriers

| Domains | English | French | German | Italian | Portuguese | Zapotec |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Social and Human Sciences |  |  |  |  |  |  |
| Giving conferences | 14 | 6 | 0 | 2 | 0 | 0 |
| Meetings | 0 | 0 | 0 | 1 | 0 | 0 |
| Writing articles | 7 | 0 | 6 | 1 | 0 | 0 |
| Sending letters | 6 | 0 | 0 | 1 | 0 | 0 |
| Telephoning | 7 | 0 | 0 | 1 | 0 | 0 |
| Socializing | 7 | 0 | 0 | 1 | 0 | 0 |
| Interviewing | 0 | 0 | 0 | 0 | 0 | 0 |
| Negotiating | 0 | 0 | 0 | 0 | 0 | 0 |
| Medical Sciences |  |  |  |  |  |  |
| Giving conferences | 22 | 0 | 0 | 0 | 0 | 0 |
| Meetings | 0 | 0 | 0 | 0 | 0 | 0 |
| Writing articles | 26 | 0 | 0 | 0 | 0 | 0 |
| Sending letters | 10 | 0 | 0 | 0 | 0 | 0 |
| Telephoning | 10 | 0 | 0 | 0 | 0 | 0 |
| Socializing | 10 | 0 | 0 | 0 | 0 | 0 |
| Interviewing | 0 | 0 | 0 | 0 | 0 | 1 |
| Negotiating | 0 | 0 | 0 | 0 | 0 | 0 |
| Administration Sciences |  |  |  |  |  |  |
| Giving conferences | 29 | 0 | 0 | 1 | 4 | 0 |
| Meetings | 10 | 0 | 0 | 1 | 1 | 0 |
| Writing articles | 14 | 0 | 0 | 0 | 2 | 0 |
| Sending letters | 10 | 0 | 0 | 0 | 2 | 0 |
| Telephoning | 9 | 0 | 0 | 1 | 2 | 0 |
| Socializing | 9 | 0 | 0 | 0 | 2 | 0 |
| Interviewing | 0 | 0 | 0 | 0 | 0 |  |
| Negotiating | 0 | 0 | 0 | 1 | 3 | 0 |
|  |  |  |  |  |  |  |

Table 3 Language abilities as language barriers Social and Human Sciences, Medical Sciences and Administration Sciences

| Language Barriers | Social and <br> Human Sciences | Medical <br> Sciences | Administration <br> Sciences | Total |
| :--- | :---: | :---: | :---: | :---: |
| Listening comprehension | 25 | 17 | 26 | 68 |
| Writing | 11 | 30 | 19 | 60 |
| Reading | 10 | 9 | 12 | 31 |
| Speaking | 9 | 32 | 29 | 70 |
| All of them | 8 | 0 | 0 | 8 |

the Faculty of Medicine but it is not mentioned as a language used or presenting problems in any other domain or area in this sample.

Table 3 shows that speaking is considered the most significant barrier for academics in Medical Sciences and Administration Sciences while listening comprehension is more important in the Social and Human Sciences. The third skill which results indicate is problematic for all the areas, but particularly for Medical Sciences, is writing. The fact that these skills are problematic when compared to the domains table (Table 2) might imply that they become a barrier when referred to the specific domains stated above. Reading was mentioned to be a barrier in Social and Human Sciences as well as in Administration Sciences, but its domain was not specified. However, when reviewing the specific examples given by the academics in the questionnaires, they mention 'they invest much time in doing something', 'translating theoretical concepts into another language', 'reading e-mails and articles'. These examples might suggest a more psycho-linguistic, socio-related type of barrier.

## Solutions

In this section the current solutions, which university academics who participated in this study, have given to their actual language problems to overcome

Table 4 Current solutions to language barriers in Social and Human Sciences, Medical Sciences and Administration Sciences

| Current solution | Social and <br> Human Sciences | Medical <br> Sciences | Administration <br> Sciences | Total |
| :--- | :---: | :---: | :---: | :---: |
| Use of dictionary | 20 | 18 | 26 | 64 |
| Asking a third party | 14 | 36 | 19 | 69 |
| Autonomous learning | 26 | 19 | 31 | 76 |
| Lessons | 4 | 4 | 6 | 14 |
| Immersion | 0 | 1 | 0 | 1 |
| Using other languages | 1 | 0 | 2 | 3 |
| Avoidance | 1 | 2 | 1 | 4 |
| Using communicative strategies | 2 | 3 | 1 | 6 |
| Unsolved | 3 | 4 | 2 | 9 |

their language barriers are discussed. They were asked how they had solved their linguistic problems so far (writing, speaking, reading, listening) (see Table 4).

Autonomous learning is one of the most common current solutions undertaken by academics who express having language barriers for the skills and domains shown in Tables 1-3. Although academics in the Administration Sciences are the ones who most make use of this means to overcome their problems with language, Social and Human Sciences as well as Medical Sciences also make extensive use of it. Asking a third party is more used by academics from Medical Sciences than any other area but it is also used quite frequently by academics in all areas. The use of a dictionary is the third most common way of solving academics' language barriers, mostly in the Administration Sciences but also in the other two areas.

It is interesting to notice that very few study participants follow language lessons in the classroom or immersion programmes or use communicative strategies to reach their academic goals. A number of academics seem to be unclear about what to do and how to overcome their language barriers, and a very few were even evasive when asked about the use of a foreign language due to a language barrier.

As we can see from the figures, the state of the world for academics participating in this study seems to look like one in which much external pressure is present for academics to use Spanish and English for giving conference papers, attending congresses as well as participating in seminars. This external pressure conflicts with the internal pressures of status maintenance, interest in international non-Spanish-speaking academic community networks as well as with their limited knowledge of academic language and the community network's protocols. The same problem is faced with the less used languages: French, Portuguese and Italian. As for individual opportunities, the current solutions appear to be pointing to a transformation in the ways of teaching/learning a language in the academic realm. In this sense, the fact that academics turn to autonomous learning, third parties and dictionaries is indicative of the necessity of implementing communities of academic writing; that is, online communities of academic networks where academics could find guidelines and principles where this 'know how' can be learned through their own languages or their working languages.

## Discussion

In this section the issues related to the 'Model of Language Selection in Scientific Communication' (Jernudd \& Baldauf, 1987) and the model of 'Ecology of Pressures' (Terborg, 2000) are discussed. I start by describing the actual state of the world of foreign languages at the university as they conform to the macro elements described by the former model, as well as to individual attitudes, beliefs, ideologies about the use of these languages, and then I explain how these elements (transformed by external pressures) may conflict with those at the individual level (internal pressures), causing an inbalance in language ecology and a disruption of scientific communication. Finally, I suggest the use of a 'common routine' within the scientific community to achieve more effective communication among scientists who may be in a similar situation.

## The sociolinguistic type of the community

This study has described how academics in Mexico belong to an academic community which demands that most do research and share knowledge through different kinds of academic events and publishing. The communicative system also demands a certain degree of socialising and contact-keeping, basically through a couple of media. The languages used which were mentioned by the participants were Spanish, English and French. Portuguese and Italian are used to a much lesser extent. Zapotec was mentioned once by a medical researcher as needed for interviews. As we can see, the academic communicative system seems to be influenced by the status of these three languages in the American forum. ${ }^{8}$ However, academics also seem to be constrained to maintain interchange mainly in Spanish, although some interactions are done in English and just a few in French, German, Portuguese or Italian. It has been seen that academics from Social and Human Sciences publish in a wider range of languages than those of Administration or Medical Sciences, who seem to be more restricted to using Spanish or English. However, quite a number of them do not participate either locally or internationally.

## The institutional constraints

There exist institutional and network constraints for academics at the National University. UNAM academics work in a merit pay context, where academics are paid according to a points system based on their output and their belonging to research communities such as the SNI. This means that some academics are compelled to participate in academic events which comply with certain criteria that have to do with the status of the events in which they participate, as well as the role they play as participants in the different events: whether they are invited contributors or have submitted their papers in the normal way for an event or journal, or whether their research work is relevant to a specialised audience or a general one. Academics obtain more points for participating as invited speakers and for publishing for a specialised audience. They also get more points if they publish articles in a refereed English-language journal than in a Mexican one. They also get more points for publishing in international forums than in national ones. International inter-institutional research projects are also considered more valuable than national ones. Scholarship and general academic interchange, therefore, demand knowledge of a foreign language.

## Network influences

The data show that academics have linguistic difficulties in writing articles in English and in German, as well as in communicating and establishing contact with colleagues in English and French. To a lesser degree this also happens with Portuguese in Administration Sciences and Italian in Social and Human Sciences. This means that the sharing of research findings and general academic interchange may be restricted to being communicated locally or in Spanishspeaking communities, if at all. Based on their difficulties in understanding English, it seems that these academics are also limited to maintaining vertical communication among their homologues in the non-Spanish-speaking international realm, due to linguistic and cultural constraints. This also seems to be the
case for French and German, for some academics. A number of academics who are willing to participate in the international non-Spanish-speaking academic networks are impeded from doing that because of their limited knowledge of foreign languages.

## The domains of language communication

It has been observed that academics' participation is also constrained to certain domains within the academic community, especially writing articles, giving presentations and establishing contact with other colleagues. Academics reported having problems communicating within these domains. Interestingly, listening was mentioned as the most problematic skill for academics in the Human and Sciences field, whereas speaking and writing were more difficult for those from Medical Social and Sciences. There exist foreign language reading comprehension courses in most of the faculties at the UNAM and, more recently, some of these started offering four-skills courses. The Centre of Foreign Languages offers general language courses in English, French and German. However, only recently has the Centre offered general writing courses for students studying English. No English course addresses the issue of writing academic papers or giving academic presentations. Courses basically focus on writing short essays and compositions. As for listening, no special attention has been devoted to developing activities that help students in gaining an understanding in this specialised domain. The same can be said of speaking, which is usually restricted to short informal conversations. Besides, many researchers are not well informed about the possibilities they have to study languages at the university or report they do not have the time to do so.

## The individual opportunities

Regarding individual opportunities, academics said that they had solved their linguistic problems through self-instruction, asking third parties or using the dictionary. It is interesting to point out that taking language lessons was not a very commonly used way for academics to solve their linguistic problems. Academics in this study reported having lost opportunities for academic interchange with colleagues due their linguistic limitations. In this way, they had not been able to attend academic events, publish in a foreign language or get grants for doing research, for postgraduate study or for taking a sabbatical abroad. Maintaining contact with non-Spanish-speaking colleagues has also been limited as a consequence.

## Language Barriers, Language Freedom and Inequality

Our data reveal that some academics from the Social and Human Sciences, Medical Sciences and Administration Sciences at the UNAM face specific language barriers in certain domains. These barriers have caused them to disengage from the academic communication network system. Unfortunately, beyond salary coercion, the university does not seem to be establishing clear mechanisms for preventing this from happening in the short term, or for supporting staff needing assistance. However, it remains to be seen what individual opportunities there exist for staff to improve their skills. It appears that
only if academics feel the internal and endogenous institutional pressures to publish in refereed foreign journals, if they have the interest to enter an academic communication network system, and if they are provided with suitable tools to carry out their academic tasks, will they be able to break through this barrier.

Returning to the ecology of pressures model, each element of the model for language selection in scientific communication (Jernudd \& Baldauf, 1987) may become a need or a conglomerate of needs for certain groups of academics. As these needs interact with the state of the world, in this case I would say the particular combination of elements just discussed, the type of linguistic community, institutional constraints and so on, make up the particular state of the world of each individual. When individual interests are in conflict with the actual state of the world, academics may find themselves at a disadvantage. For example, if a monolingual speaker of Spanish wishes to interact with non-Spanish-speakers, he or she may feel compelled to learn the language only if that language is recognised as the language in which 'proper' academic communication takes place. Otherwise, this particular individual might choose not to interact in that language but in his or her own language or in another one. However, this can also be the case with the prestigious variety of Spanish within a monolingual community or with the specific academic community that 'sets the terms' on what is to be admitted and / or refused as academic discourse.

As has been suggested elsewhere (Baldauf, 2001; Flowerdew, 2000, 2001; O'Driscoll, 2002), some possible actions could be enacted to achieve what Terborg and García (manuscript) call a 'common routine' ${ }^{9}$ to improve the academic communication network in both formal and informal domains (see Figure 1).

In both the formal and the informal domains, academics report having problems in communicating at either level A , where the message is not intelligible or it is partially incomprehensible or at level $B$, where the message is comprehensible for all the participants but it is not accepted by all of them. This latter problem is related to attitudes. Some of the academics in this study reported having problems at both levels of communication. If the common routine is based on a common ground of interaction, participants who have a limited use of foreign languages but who share a mixed code system of languages and interests could perhaps focus on developing a minimum of interaction levels for information for specific activities in some domains.

Some actions could be considered in order to achieve a certain level of freedom to communicate with non-Spanish-speaking academics. For giving conferences and participating in seminars in formal domains, academics could use a different language from their first language (Weydt, 2002) or give the presentation in their first language and present transparencies or hand-outs with a translation in other language/s. They could also establish official languages (local and non-local ones) for international events with or without simultaneous translation, to provide a translated version of the conference paper in at least two other languages, translate proceedings into the language of the host country, and even implement a policy for including in the seminars' bibliography a more balanced choice of articles written in languages other than English (LOTE).

Having a common routine based on these actions could lead to a more balanced ecology in the use of foreign languages in the academic community. It would be an advantage that academics had common ground that allowed the use


## ECOLOGY OF PRESSURES

Figure 1 Language selection in the scientific community based on the model of the ecology of pressures
Source: Jernudd and Baldauf, 1987; Terborg, 2000)
of certain common linguistic systems. The individual pressure to understand the point of view of the other and basic or intermediate knowledge of the language could be enough to achieve communication at both levels. This kind of common routine could also operate for telephoning and socialising, as well as for informal written communication through e-mail or ordinary mail. Formal writing, however, demands not only a common routine but also a fairly high linguistic competence. For at least $25 \%$ of the academics who participated in this study, formal writing in another language is considered a barrier (mainly in English but also in French, German, Portuguese and Italian) and 32\% consider that they have a limited language ability, mostly in the Medical Sciences but also in the Administration Sciences and to a lesser extent in the Social and Human Sciences.

Some of the problems faced in writing are feeling insecure about writing in English, feeling unable to transmit what one means or to express ideas, using local terminology, thinking in the foreign language and reduction of vocabulary and argument. This has basically the consequence of making publication of articles in foreign languages difficult. From the reading of these comments made by academics I would tend to answer affirmatively to Ammon's (this volume) question about whether language-specific thinking gets lost in another language. I would say that at least in the case of the participants in this study, that is true to a modest extent.

Regarding the question of whether the spread of scientific knowledge is improved through the reduction to a single international language or is rather constrained, I would say that knowledge spread has indeed improved for a reduced proportion of the population. This increase, however, is the result of the merit pay system more than the election of a single language. At the same time, it has also affected non-English-speaking academics who are judged as less efficient (and are usually less well paid) because they are constrained to publish in journals with a lesser status in a less valued language. It has also isolated these academics from the non-Spanish-speaking academic communities. As can be inferred from the data, there seems to be interest in using a range of other languages in various domains. Yet, the external pressures for using English appear to be.

As indicated at the beginning of this paper, and as a consequence of institutional constraints, it might be possible that strong language policies related to Chinese, Portuguese and Italian could change the state of the world at the university, but so far English is the most learned language, although, as we have learned from the data, hardly any academic takes or has the time to take language courses. The use of English is therefore restricted to giving conference papers, mainly in the areas of Social and Human Sciences and Medical Sciences, and attending congresses. Academics who do publish articles in English refer to facing language barriers. Some of them have found ways to solve their problems, and this shows local and global possibilities for a proposal to teach writing in ESP for academics in the Medical Sciences, who report having language barriers for writing articles in English. But ultimately it is the academic's choice to decide which academic network he or she is willing to join.

A common routine in this case could be achieved through collaborative work (author, editor and revisers) as suggested by Flowerdew $(2000,2001)$ or Baldauf (2001), publication in multilingual journals such as Linguistik Online, the promotion of substantial academic journals internationally through the writing of LOTE journal reviews, the provision of citation databases in languages other than English that include work done by local academic networks, the encouragement of co-authorship between academics in different countries, the proposal to translate special collections of local articles from specific areas into an international language other than Spanish, such as is the case with VELON (Association of Education in the Netherlands). These actions within the framework of a common routine could open a space where new rules of the game are established so that academics from different linguistic backgrounds could participate in the construction of knowledge. This would mean bringing together linguists working in ESP, discourse analysis, lexicology, educators and all those interested in building up an academic network.

## Conclusion

In this paper I have investigated what languages are used to carry out academic activities by academics from the Human and Social, Medical and Administration Sciences at the National Autonomous University of Mexico, what language barriers they face when doing those activities and what, to date, have been the solutions they have found to the language barriers they have faced. Academics in these areas have a tendency to use Spanish, English and French in the following formal domains: writing and reading articles, understanding conferences, and speaking in conferences. They also have problems in communicating in less formal situations, such as when sharing information or impressions with colleagues. Most of them have tried to solve this problem through asking third parties, self-teaching, and using the dictionary. Only a few have taken language classes. This means that some academics from the university are excluded from non-Spanish international academic communication network systems due to their linguistic limitations. A common routine is suggested as a way to achieve a more balanced academic interchange within the academic communication network. This would have an effect on the way academics use their right to take part in the construction of knowledge in the world.

Participants in this study have faced language barriers mainly for giving conference presentations, writing articles, telephoning, having meetings and sending letters. Academics' language freedom is threatened due to the actual state of the world which favours the use of English for social, economic and academic mobility, due to the merit pay system. Academics who do not interact internationally in the English world might be, at least partially, isolated from certain non-Spanish-speaking academic communities. This of course might also affect the academics' freedom to participate in the construction of knowledge in the language of their choice. However, participation in languages other than English will also imply isolation if academics are not linguistically and culturally recognised as valuable academic interlocutors, or if they consider themselves linguistically and culturally handicapped in doing so.

## Correspondence

Any correspondence should be directed to Laura García Landa, Centro de Enseñanza de Lenguas Extranjeras (CELE), Universidad Nacional Autónoma de México, Circuito Interior Ciudad Universitaria, s/n. CP 04510, México, D.F. (garlan@servidor. unam.mx).

## Notes

1. The languages currently taught at the Centre of Foreign Languages are: English, French, German, Portuguese, Italian, Swedish, Catalan, Modern Greek, Japanese, Chinese, Korean, Hebrew, Arabic, Rumanian and Russian.
2. The regions that have academic agreements with the National Autonomous University of Mexico are Africa (Argelia and Costa de Marfil), Latin America (Argentina, Bolivia, Brasil, Colombia, Costa Rica, Cuba, Chile, Ecuador, El Salvador, Guatemala, Honduras, Nicaragua, Panamá, Paraguay, Perú, Puerto Rico, Dominican Republic, Uruguay, Venezuela), North America (Canada and the United States), Europe (Germany, Austria, Belgium, Bulgaria, Spain, Spanish International Organisation, Finland, France, The Netherlands, Hungary, Italy, Poland, United Kingdom, Ruma-
nia, Czech Republic, Slovakia, Russian Federation, Sweden and Yugoslavia), Asia (China, India, Israel, Japan) and Oceania (New Zealand).
3. Some teachers in fact do so in the Writing Course (level 7) but it is basically up to the teacher.
4. The ecology of pressures model explains the relationship between language, power and pressure (with pressure we are referring to the obligations an individual feels to act in a certain manner), advantage, disadvantage and LHRs (linguistic human rights), and how competence interweaves with all these aspects. Pressure may lead to action and action changes the actual state of the world.
5. The state of the world comprises everything related to interests and pressures that lead to (a) particular action/s; that is, it entails the present, the past and the future. This state of the world can be divided into 'state of things' that coexist with other states of the world, which can be relevant for interests and pressures that lead to action/s for transforming the state of the world. It considers the actual existence of things independently from the mind. It can become a relevant state for human action through mental reality. It is dynamic and implies relevant processes for the creation of pressures. It also implies all the beliefs, the concepts, the knowledge, all the skills and all individual and group ideologies as well as interests and pressures that lead to actions; that is, all the tools used in modifying the state of the world, the individuals, the society, the pressures and actions that affect the whole society (Terborg, 2000).
6. The institutes contacted for applying the questionnaire were: Instituto de Geografía, Instituto de Investigaciones Bibliográficas, Instituto de Biotecnología, Instituto de Investigaciones Económicas, Instituto de Ecología, Instituto de Física. Centres: Centro de Enseñanza para Extranjeros, Centro de Ciencias Físicas, Centro de Investigaciones Interdisciplinarias en Ciencias y Humanidades, Centro Universitario de Estudios Cinematográficos, Centro Coordinador y Difusor de Estudios Latinoamericanos, Centro de Estudios Sobre la Universidad. Faculties: Facultad de Filosofía y Letras, Facultad de Contaduría y Administración, Facultad de Psicología, Facultad de Arquitectura, Facultad de Ciencias Políticas y Sociales, Facultad de Medicina Veterinaria y Zootecnia. Schools: Escuela Nacional de Música, Colegio de Ciencias y Humanidades, Escuela Nacional de Artes Plásticas. [Institutes: Institute of Geography, Institute of Bibliographic Research, Institute of Biotechnology, Institute of Economic Research, Institute of Ecology, Institute of Physics. Centres: Centre for the Teaching of Foreign Languages, Centre of Physical Sciences, Centre of Interdisciplinary Research in Social and Human Sciences, University Centre of Cinematographic Studies, Centre for the Coordination and Diffusion of Latin-American Studies, Centre of University Studies. Faculties: Faculty of Philosophy, Faculty of Accounting and Administration, Faculty of Psychology, Faculty of Architecture, Faculty of Social and Political Sciences, Faculty of Medicine, Faculty of Veterinary and Zootechnology. Schools: National School of Music, College of Sciences and Humanities, National School of Plastic Arts].
7. These activities included the following: participating in meetings, negotiations, presentations, conferences, writing articles, letters or e-mails, telephoning, and socialising.
8. During the InterAmerican Seminar of Language Management in Québec (2002) English, French, Portuguese and Spanish were declared official languages of the Americas. Consequently, these languages would have priority over other languages in the education domain, together with the promotion of local languages.
9. Shared facility comprises the interpersonal knowledge related to one or more communities. Individuals look for a selection of signs to be shared with a given group of speakers who seek to develop a more effective communication system. It implies a mutual pressure from the speakers involved to share which eventually eliminates inequalities among participants. It involves different individuals working in cooperation to solve a problem.

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## The Author

Laura García Landa is associate professor at the Centre for the Teaching of Foreign Languages at the National Autonomous University of Mexico. She teaches Sociolinguistics in the Diploma of Teacher Development and in the Masters of Applied Linguistics Programme at the same university. She leads the project 'The Use of English and Spanish in University Academics' and participates in the 'Linguistic Ecology in Mexico' project in the Department of Applied Linguistics. Her areas of interest are sociolinguistics in education, and language in education policy and planning. She has edited (with Roland Terborg) Los retos de la política del lenguaje en el siglo XXI [The Challenges of Language Policy in the 21st Century], UNAM (in press).

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